

## EXHIBIT 2

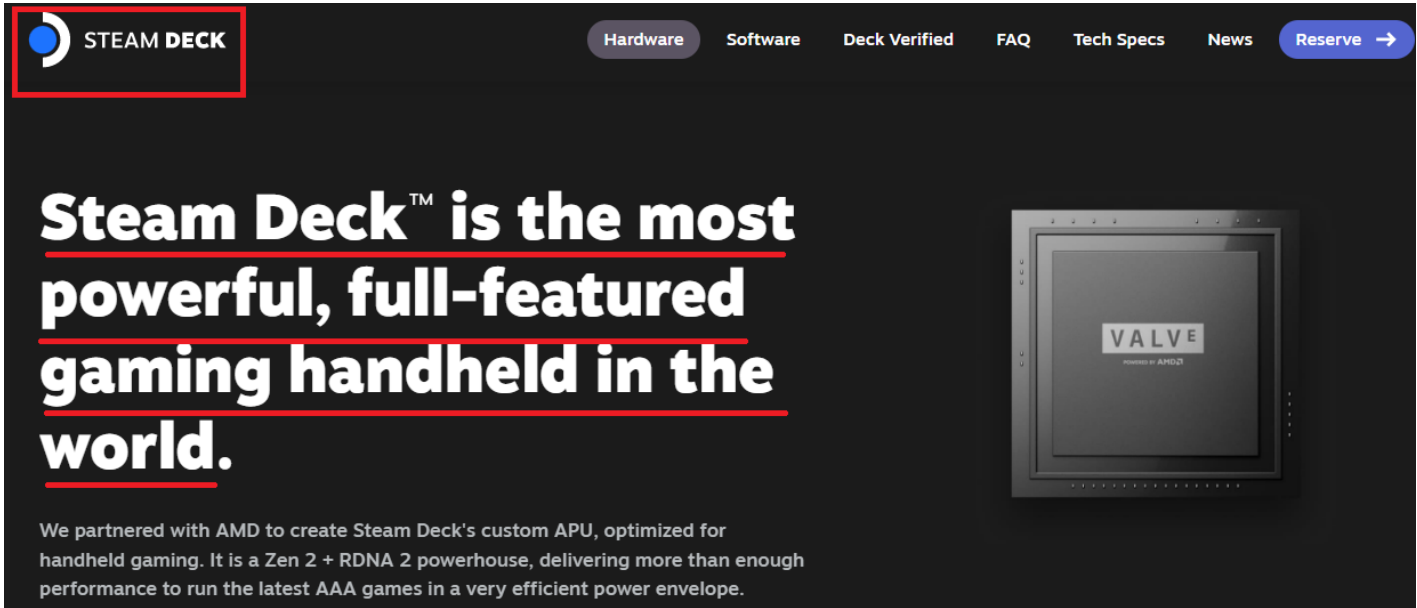
US10938246B2	Valve Steam Deck ("The accused product")
1. A battery-operated device comprising:	<p>The accused product is a battery-operated device (e.g., gaming handheld)</p>  <p><a href="https://www.steamdeck.com/en/hardware">https://www.steamdeck.com/en/hardware</a></p>

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<https://www.steamdeck.com/en/hardware>

## Power

Input

45W USB Type-C PD3.0 power supply

Battery

40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>

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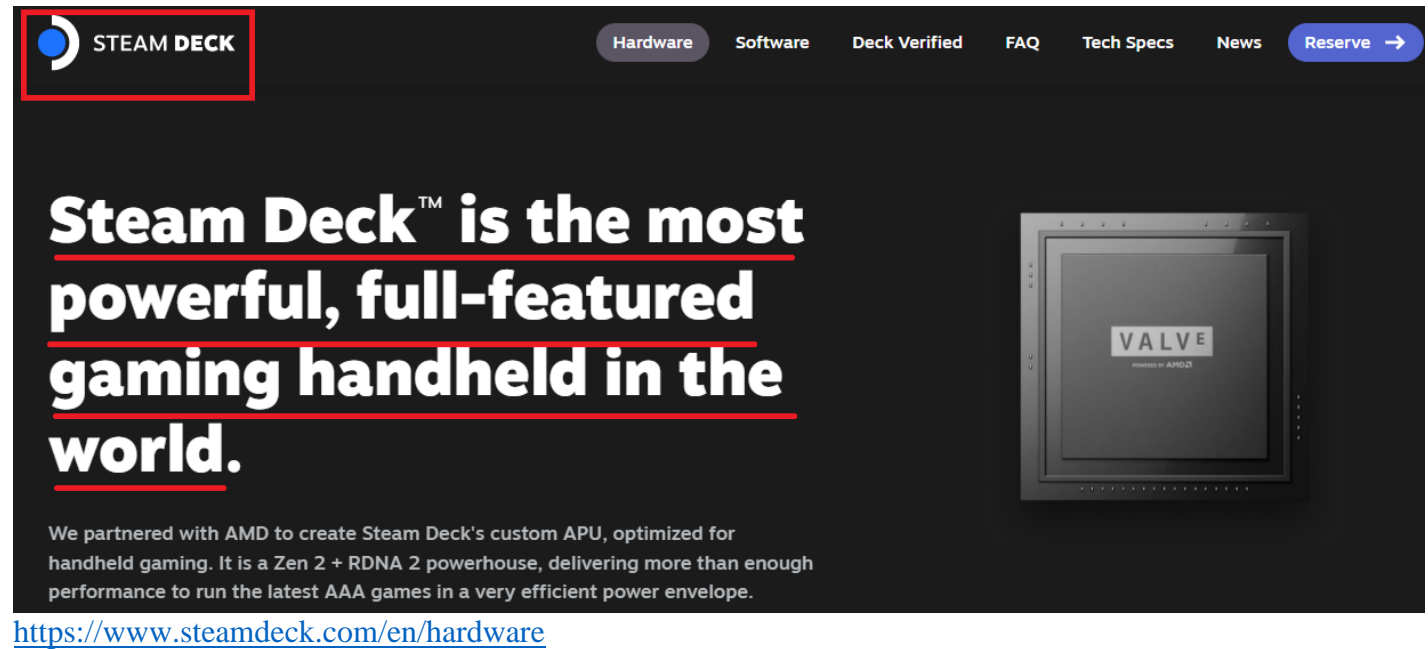


Source: Steam deck external image

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a battery;

The accused product comprises a battery



The screenshot shows the Steam Deck website homepage. At the top left is the Steam Deck logo, which consists of a blue circle with a white 'S' and the text 'STEAM DECK' next to it. To the right of the logo is a navigation bar with links: 'Hardware', 'Software', 'Deck Verified', 'FAQ', 'Tech Specs', 'News', and a 'Reserve' button with a right arrow. The main content area features a large headline: 'Steam Deck™ is the most powerful, full-featured gaming handheld in the world.' The words 'powerful, full-featured' and 'gaming handheld' are underlined. To the right of the text is an image of the Steam Deck handheld device, which is black with a silver frame and the 'VALVE' logo on the screen. Below the headline, there is a paragraph of text: 'We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope.' At the bottom of the screenshot is a blue hyperlink: <https://www.steamdeck.com/en/hardware>.

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<https://www.steamdeck.com/en/hardware>

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Source: Steam deck external image



Source: Steam deck internal image

an electronic circuitry configured to be powered by the battery; and

The accused product comprises an electronic circuitry (e.g., circuitry for display) configured to be powered by the battery.

The accused product comprises circuitries for display which is powered by the battery of the accused product.

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	<div><div><div> STEAM DECK</div><div><div>Hardware</div><div>Software</div><div>Deck Verified</div><div>FAQ</div><div>Tech Specs</div><div>News</div><div>Reserve →</div></div></div><div><h1>Steam Deck™ is the most powerful, full-featured gaming handheld in the world.</h1></div><div><p>We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope.</p></div><div></div></div> <div><p><a href="https://www.steamdeck.com/en/hardware">https://www.steamdeck.com/en/hardware</a></p></div>
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<https://www.steamdeck.com/en/hardware>

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	<div><div><b>Power</b></div><div>Input</div><div><u>45W USB Type-C PD3.0 power supply</u></div><div>Battery</div><div>40Whr battery. 2 - 8 hours of gameplay</div></div> <div><a href="https://www.steamdeck.com/en/tech">https://www.steamdeck.com/en/tech</a></div>
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*Source: Steam deck internal image*

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	<div> <b>Display</b> </div> <table> <tr> <td>Resolution</td><td>1280 x 800px (16:10 aspect ratio)</td></tr> <tr> <td>Type</td><td>Optically bonded IPS LCD for enhanced readability</td></tr> <tr> <td>Display size</td><td>7" diagonal</td></tr> <tr> <td>Brightness</td><td>400 nits typical</td></tr> <tr> <td>Refresh rate</td><td>60Hz</td></tr> <tr> <td>Touch enabled</td><td>Yes</td></tr> <tr> <td>Sensors</td><td>Ambient light sensor</td></tr> </table> <p><a href="https://www.steamdeck.com/en/tech">https://www.steamdeck.com/en/tech</a></p>	Resolution	1280 x 800px (16:10 aspect ratio)	Type	Optically bonded IPS LCD for enhanced readability	Display size	7" diagonal	Brightness	400 nits typical	Refresh rate	60Hz	Touch enabled	Yes	Sensors	Ambient light sensor
Resolution	1280 x 800px (16:10 aspect ratio)														
Type	Optically bonded IPS LCD for enhanced readability														
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Sensors	Ambient light sensor														
<p>a converter configured to receive energy from any of a plurality of authorized chargers, and generate power from the energy for charging the battery using the power;</p>	<p>The accused product comprises a converter (e.g., converting power from USB to battery charging) configured to receive energy (e.g., power from USB) from any of a plurality of authorized chargers (e.g., a plurality of chargers compliant with USB PD 2.0 and USB PD 3.0 standards), and generate power from the energy for charging the battery (e.g., battery of the accused product) using the power.</p> <p>The accused product charges its battery in compliance with USB PD 3.0 charging standard. The USB PD 3.0 standard provides the same output power support as the USB PD 2.0 and in addition provides programmable power supply (PPS) and is backward compatible with USB PD 2.0 for charging the battery.</p>														

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	<div> <b>STEAM DECK</b><div><a href="#">Hardware</a> <a href="#">Software</a> <a href="#">Deck Verified</a> <a href="#">FAQ</a> <a href="#">Tech Specs</a> <a href="#">News</a> <a href="#">Reserve</a> →</div></div> <div><h1><u>Steam Deck™ is the most powerful, full-featured gaming handheld in the world.</u></h1></div> <div><p>We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope.</p></div> <div></div> <div><p><a href="https://www.steamdeck.com/en/hardware">https://www.steamdeck.com/en/hardware</a></p></div>
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Source: Steam deck external image

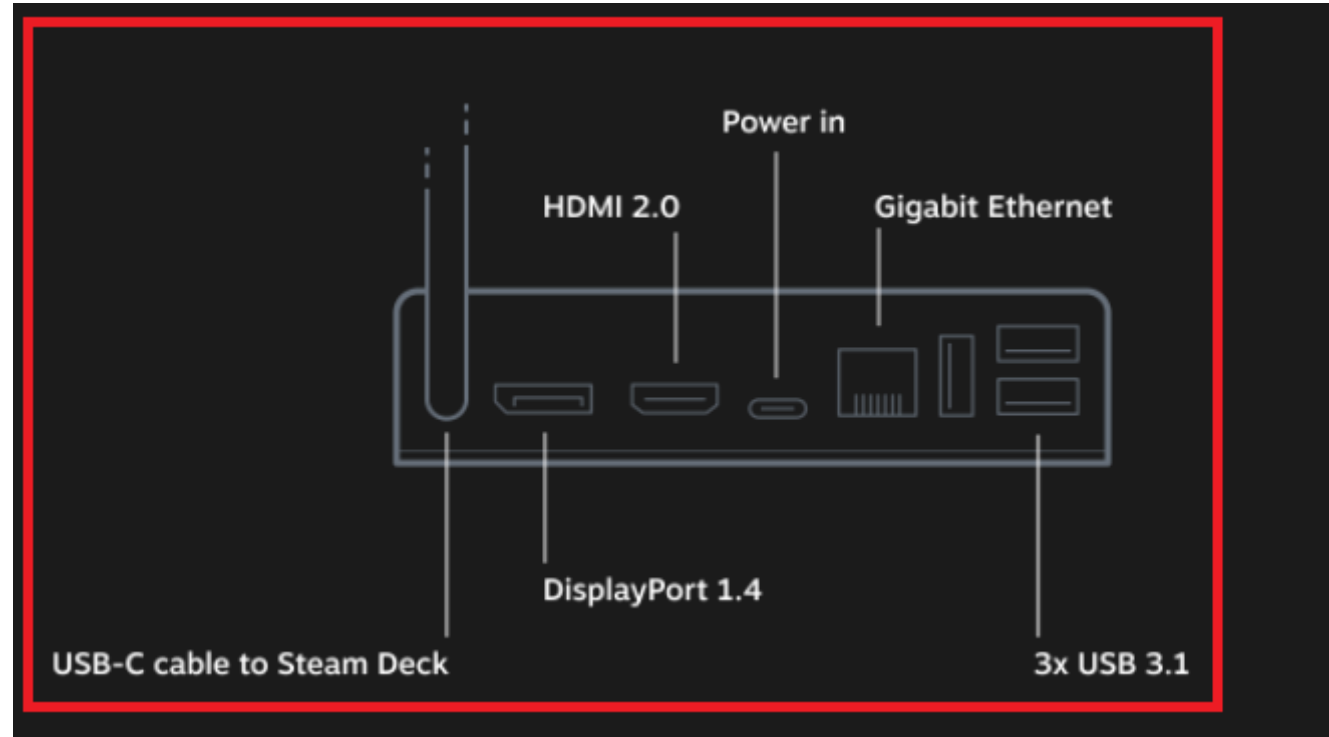
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Version	USB BC 1.2	USB PD 1.0	USB PD 2.0	USB PD 3.0	USB PD 3.0 PPS	USB PD 3.1
	BC 1.2	PD 1.0	2.0	3.0	PPS	3.1
Release date	2010	2012	2014	2015	2017	2021
USB type	USB Type-A	USB Type-A, USB Type-B	USB Type- C	USB Type- C	USB Type-C	USB Type-C
Output support	5V1, 5A		5V 3A, 9V 3A, 15V 3A, 20V 2.25A, 20V 3A, 20V 5A	5V 3A, 9V 3A, 15V 3A, 20V 2.25A, 20V 3A, 20V 5A	5V 3A, 9V 3A, 15V 3A, 20V 2.25A, 20V 3A, 20V 5A PPS: 3.3V-5.9V 3A, 3.3-11V 3A, 3.3-16V 3A, 3.3-21V 3A, 3.3-21V 3A, 3.3-21V 5A	5V 3A, 9V 3A, 15V 3A, 20V 3A, 20V 5A PPS: 3.3V-5.9V 3A, 3.3-11V 3A, 3.3-16V 3A, 3.3-21V 3A, 3.3-21V 5A AVS: 15-28V 5A, 15-36V 5A, 15-48V 5A

<https://www.thephonetalks.com/usb-pd-2-0-vs-3-0-vs-3-1/>

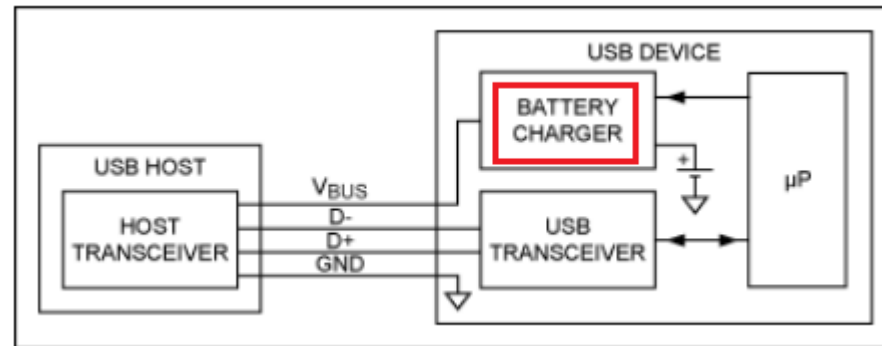


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<https://www.steamdeck.com/en/tech>

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<https://www.electronicproducts.com/the-basics-of-usb-battery-charging-a-survival-guide/#>

### 2.3 Compatibility with Revision 2.0

Revision 3.0 of the USB Power Delivery specification is designed to be fully interoperable with [USBPD 2.0] systems using BMC signaling over the [USB Type-C 2.0] connector and to be compatible with Revision 2.0 hardware.

This specification mandates that all Revision 3.0 systems fully support Revision 2.0 operation. They must discover the supported Revision used by their Port Partner and any connected Cable Plugs and revert to operation using the lowest common Revision number (see Section 6.2.1.1.5).

This specification defines Extended Messages containing data of up to 260 bytes (see Section 6.2.1.2). These Messages will be larger than expected by existing PHY HW. To accommodate Revision 2.0 based systems a Chunking mechanism is mandated such that Messages are limited to Revision 2.0 sizes unless it is discovered that both systems support the longer Message lengths.

*Source: USB PD 3.0 specification.PDF*

The accused product receives energy from a charger (e.g., an authorized charger complying with USB PD 2.0 or USB PD 3.0) which provides messages according to USB PD standards to indicate its charging capabilities and specification revision value. After selection of the common specification revision level and negotiation of power requirements, it generates power for charging the battery from the received energy.

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## 6.2.1.1.5 Specification Revision

The Specification Revision field **Shall** be one of the following values (except 11b):

- 00b – Revision 1.0
- 01b – Revision 2.0
- 10b – Revision 3.0
- 11b – **Reserved, Shall Not** be used

To ensure interoperability with existing USBPD Products, USBPD Products **Shall** support every PD Specification Revision starting from [USBPD 2.0] for SOP\*; the only exception to this is a VPD which **Shall Ignore** Messages sent with PD Specification Revision 2.0 and earlier.

After a physical or logical (USB Type-C® Error Recovery) Attach, a Port discovers the common Specification Revision level between itself and its Port Partner and/or the Cable Plug(s), and uses this Specification Revision level until a Detach, Hard Reset or Error Recovery happens.

After detection of the Specification Revision to be used, all PD communications **Shall** comply completely with the relevant revision of the PD specification.

An Attach event or a Hard Reset **Shall** cause the detection of the applicable Specification Revision to be performed for both Ports and Cable Plugs according to the rules stated below:

When the Source Port first communicates with the Sink Port the Specification Revision field **Shall** be used as described by the following steps:

1. The Source Port sends a Source Capabilities Message to the Sink Port setting the Specification Revision field to the highest Revision of the Power Delivery Specification the Source Port supports.
2. The Sink Port responds with a Request Message setting the Specification Revision field to the highest Revision of the Power Delivery Specification the Sink Port supports that is equal to or lower than the Specification Revision received from the Source Port.
3. The Source and Sink Ports **Shall** use the Specification Revision in the Request Message from the Sink in step 2 in all subsequent communications until a Detach, Hard Reset, or Error Recovery happens.

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Table 6-1 Message Header

Bit(s)	Start of Packet	Field Name	Reference
15	SOP*	<i>Extended</i>	Section 6.2.1.1.1
14...12	SOP*	<i>Number of Data Objects</i>	Section 6.2.1.1.2
11...9	SOP*	<i>MessageID</i>	Section 6.2.1.1.3
8	SOP only	<i>Port Power Role</i>	Section 6.2.1.1.4
	SOP'/SOP''	<i>Cable Plug</i>	Section 6.2.1.1.7
7...6	SOP*	<i>Specification Revision</i>	Section 6.2.1.1.5
5	SOP only	<i>Port Data Role</i>	Section 6.2.1.1.6
	SOP'/SOP''	<i>Reserved</i>	Section 1.4.2.10
4...0	SOP*	<i>Message Type</i>	Section 6.2.1.1.8

2.6.2 Sink Operation

- **At Attach (no PD Connection or Contract):**
  - Sink detects Source Attachment through the presence of *vSafe5V*.
  - For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.
  - Once the Sink detects the presence of *vSafe5V* on  $V_{BUS}$  it waits for a *Source\_Capabilities* Message indicating the presence of a PD capable Source.
  - If the Sink does not receive a *Source\_Capabilities* Message within *tTypeCSinkWaitCap* then it issues *Hard Reset* Signaling in order to cause the Source Port to send a *Source\_Capabilities* Message if the Source Port is PD capable.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.
- **Establishing PD Connection (no PD Connection or Contract):**
  - The Sink receives a *Source\_Capabilities* Message and responds with a *GoodCRC* Message.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.

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## 6.4.1.2 Source\_Capabilities Message

A Source Port **Shall** report its capabilities in a series of 32-bit Power Data Objects (see Table 6-7) as part of a Source\_Capabilities Message (see Figure 6-12). Power Data Objects are used to convey a Source Port's capabilities to provide power including Dual-Role Power ports presently operating as a Sink.

Each Power Data Object **Shall** describe a specific Source capability such as a Battery (e.g. 2.8-4.1V) or a fixed power supply (e.g. 12V) at a maximum allowable current. The Number of Data Objects field in the Message Header **Shall** define the number of Power Data Objects that follow the Message Header in a Data Message. All Sources **Shall** minimally offer one Power Data Object that reports **vSafe5V**. A Source **Shall Not** offer multiple Power Data Objects of the same type (fixed, variable, Battery) and the same voltage but **Shall** instead offer one Power Data Object with the highest available current for that Source capability and voltage.

Sinks with Accessory Support do not source  $V_{BUS}$  (see [USB Type-C 2.0]). Sinks with Accessory Support are still considered Sources when sourcing  $V_{CONN}$  to an Accessory even though  $V_{BUS}$  is not applied; in this case they **Shall** advertise **vSafe5V** with the Maximum Current set to 0mA in the first Power Data Object. The main purpose of this is to enable the Sink with Accessory Support to get into the **PE\_SRC\_Ready** State in order to enter an Alternate Mode.

A Sink **Shall** evaluate every Source\_Capabilities Message it receives and **Shall** respond with a Request Message. If its power consumption exceeds the Source's capabilities it **Shall** re-negotiate so as not to exceed the Source's most recently advertised capabilities.

A Sink that evaluates the Source\_Capabilities Message it receives and identifies a PPS APDO **Shall** periodically re-request the PPS APDO at least every tpsRequest until either:

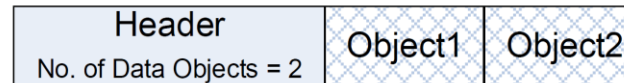
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**6.4.1 Capabilities Message**

A Capabilities Message (Source\_Capabilities Message or Sink\_Capabilities Message) **shall** have at least one Power Data Object for vSafe5V. The Capabilities Message **shall** also contain the sending Port's information followed by up to 6 additional Power Data Objects. Power Data Objects in a Capabilities Message **shall** be sent in the following order:

1. The vSafe5V Fixed Supply Object **shall** always be the first object.
2. The remaining Fixed Supply Objects, if present, **shall** be sent in voltage order; lowest to highest.
3. The Battery Supply Objects, if present **shall** be sent in Minimum Voltage order; lowest to highest.
4. The Variable Supply (non-Battery) Objects, if present, **shall** be sent in Minimum Voltage order; lowest to highest.
5. The Programmable Power Supply Objects, if present, **shall** be sent in Maximum Voltage order; lowest to highest.

Figure 6-12 Example Capabilities Message with 2 Power Data Objects



In Figure 6-12, the Number of Data Objects field is 2: vSafe5V plus one other voltage.

Power Data Objects (PDO) and Augmented Power Data Objects (APDO) are identified by the Message Header's Type field. They are used to form Source\_Capabilities Messages and Sink\_Capabilities Messages.



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Sources expose their power capabilities by sending a Source Capabilities Message. Sinks expose their power requirements by sending a Sink Capabilities Message. Both are composed of a number of 32-bit Power Data Objects (see Table 6-7).

Table 6-7 Power Data Object

Bit(s)	Description	
B31...30	<b>Value</b>	<b>Parameter</b>
	00b	Fixed supply ( $V_{min} = V_{max}$ )
	01b	Battery
	10b	Variable Supply (non-Battery)
	11b	Augmented Power Data Object (APDO)
B29...0	Specific Power Capabilities are described by the PDOs in the following sections.	

The Augmented Power Data Object (APDO) is defined to allow support for more than the four PDO types by extending the Power Data Object field from 2 to 4 bits when the B31...B30 are 11b. The generic APDO structure is shown in Table 6-8.

Table 6-8 Augmented Power Data Object

Bit(s)	Description
B31...30	11b – Augmented Power Data Object (APDO)
B29...28	00b – Programmable Power Supply 01b-11b - <b>Reserved</b>
B27...0	Specific Power Capabilities are described by the APDOs in the following sections.

*Source: USB PD 3.0 specification.PDF*

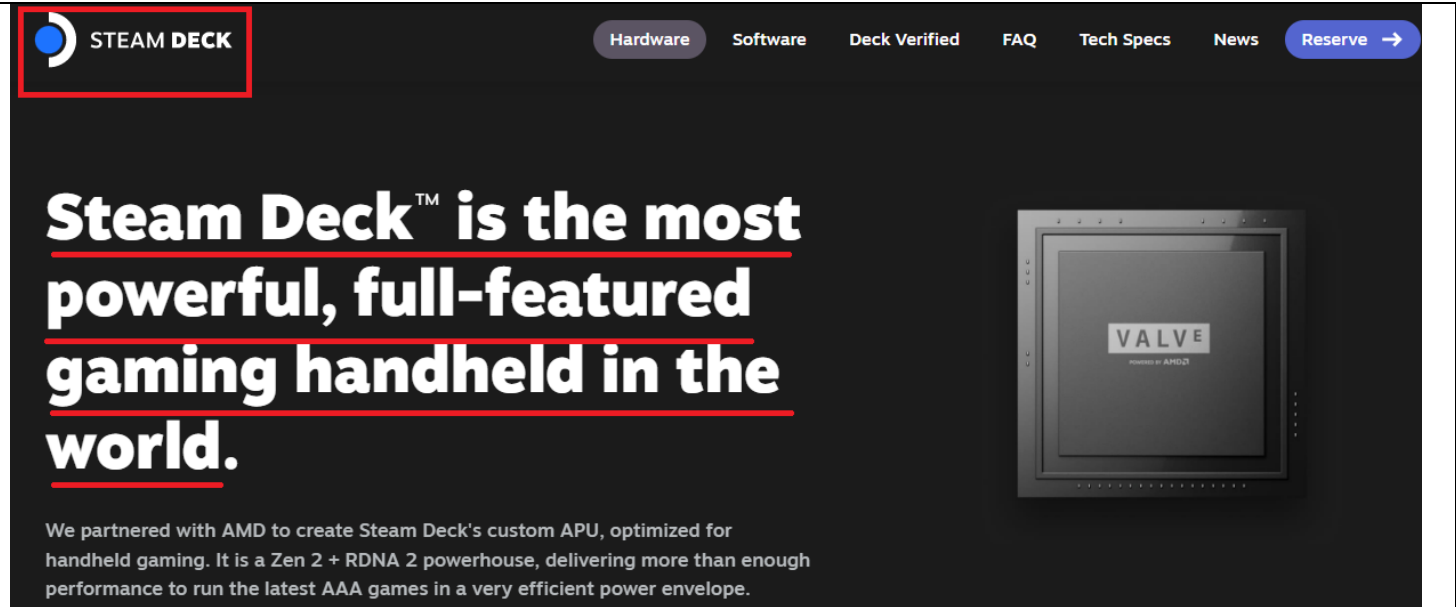
the battery-operated device configured to:  
receive a charger identification from a charger;

**Excerpt from US'246 [13:5-15]:**  
*C. Power Transfer only from Authorized Masters*

The accused product is the battery-operated device which is configured to receive a charger identification (e.g., information related to capabilities of a charger as well as specification revision value supported by the charger as indicated in the Source Capabilities Message) from a charger.

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*A slave prevents non-authorized masters from trying to charge it or power it up (or networked servers from commanding masters to charge it or power it up) in some embodiments. Slaves store **identifying information about masters (or networked servers) that are authorized to charge them. The stored information about authorized masters or networked servers includes one or more of the following information about the masters: the masters' media access control address (MAC ID), network IP address, name, serial number, product name and manufacturer, **capabilities**, etc.***



The image is a screenshot of the Steam Deck product page. At the top left is the Steam Deck logo, which consists of a blue circle with a white 'S' and the text 'STEAM DECK' next to it. To the right of the logo is a navigation bar with links: 'Hardware', 'Software', 'Deck Verified', 'FAQ', 'Tech Specs', 'News', and a 'Reserve' button with a right arrow. The main headline reads: 'Steam Deck™ is the most powerful, full-featured gaming handheld in the world.' The headline is underlined with red lines. To the right of the headline is an image of the Steam Deck handheld device, which is black with a silver frame and a screen displaying the 'VALVE' logo. Below the headline, there is a paragraph of text: 'We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope.'

<https://www.steamdeck.com/en/hardware>



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Source: Steam deck external image

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An Attach event or a Hard Reset **shall** cause the detection of the applicable Specification Revision to be performed for both Ports and Cable Plugs according to the rules stated below:

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## EXHIBIT 2

	<p><b>2.6.2 Sink Operation</b></p> <ul style="list-style-type: none"> <li>• At Attach (no PD Connection or Contract):             <ul style="list-style-type: none"> <li>○ Sink detects Source Attachment through the presence of <i>vSafe5V</i>.</li> <li>○ For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.</li> <li>○ Once the Sink detects the presence of <i>vSafe5V</i> on <math>V_{BUS}</math> it waits for a <i>Source_Capabilities</i> Message indicating <u>the presence of a PD capable Source.</u></li> <li>○ <u>If the Sink does not receive a <i>Source_Capabilities</i> Message within <i>tTypeCSinkWaitCap</i> then it issues <i>Hard Reset</i> Signaling in order to cause the Source Port to send a <i>Source_Capabilities</i> Message if the Source Port is PD capable.</u></li> <li>○ The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.</li> </ul> </li> <li>• Establishing PD Connection (no PD Connection or Contract):             <ul style="list-style-type: none"> <li>○ The Sink receives a <i>Source_Capabilities</i> Message and responds with a <i>GoodCRC</i> Message.</li> <li>○ The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and <i>Discards</i> them.</li> </ul> </li> </ul>
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## 6.4.1.2 Source\_Capabilities Message

A Source Port **Shall** report its capabilities in a series of 32-bit Power Data Objects (see Table 6-7) as part of a Source\_Capabilities Message (see Figure 6-12). Power Data Objects are used to convey a Source Port's capabilities to provide power including Dual-Role Power ports presently operating as a Sink.

Each Power Data Object **Shall** describe a specific Source capability such as a Battery (e.g. 2.8-4.1V) or a fixed power supply (e.g. 12V) at a maximum allowable current. The **Number of Data Objects** field in the Message Header **Shall** define the number of Power Data Objects that follow the Message Header in a Data Message. All Sources **Shall** minimally offer one Power Data Object that reports **vSafe5V**. A Source **Shall Not** offer multiple Power Data Objects of the same type (fixed, variable, Battery) and the same voltage but **Shall** instead offer one Power Data Object with the highest available current for that Source capability and voltage.

Sinks with Accessory Support do not source  $V_{BUS}$  (see [USB Type-C 2.0]). Sinks with Accessory Support are still considered Sources when sourcing  $V_{CONN}$  to an Accessory even though  $V_{BUS}$  is not applied; in this case they **Shall** advertise **vSafe5V** with the Maximum Current set to 0mA in the first Power Data Object. The main purpose of this is to enable the Sink with Accessory Support to get into the **PE\_SRC\_Ready** State in order to enter an Alternate Mode.

A Sink **Shall** evaluate every Source\_Capabilities Message it receives and Shall respond with a Request Message. If its power consumption exceeds the Source's capabilities it **Shall** re-negotiate so as not to exceed the Source's most recently advertised capabilities.

A Sink that evaluates the Source\_Capabilities Message it receives and identifies a PPS APDO Shall periodically re-request the PPS APDO at least every tPPSRequest until either:

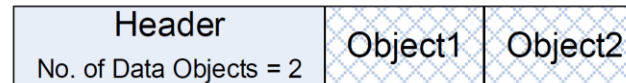
## EXHIBIT 2

**6.4.1 Capabilities Message**

A Capabilities Message (Source Capabilities Message or Sink Capabilities Message) **shall** have at least one Power Data Object for vSafe5V. The Capabilities Message **shall** also contain the sending Port's information followed by up to 6 additional Power Data Objects. Power Data Objects in a Capabilities Message **shall** be sent in the following order:

1. The vSafe5V Fixed Supply Object **shall** always be the first object.
2. The remaining Fixed Supply Objects, if present, **shall** be sent in voltage order; lowest to highest.
3. The Battery Supply Objects, if present **shall** be sent in Minimum Voltage order; lowest to highest.
4. The Variable Supply (non-Battery) Objects, if present, **shall** be sent in Minimum Voltage order; lowest to highest.
5. The Programmable Power Supply Objects, if present, **shall** be sent in Maximum Voltage order; lowest to highest.

Figure 6-12 Example Capabilities Message with 2 Power Data Objects



In Figure 6-12, the Number of Data Objects field is 2: vSafe5V plus one other voltage.

Power Data Objects (PDO) and Augmented Power Data Objects (APDO) are identified by the Message Header's Type field. They are used to form Source Capabilities Messages and Sink Capabilities Messages.

## EXHIBIT 2

	<p>Sources expose their power capabilities by sending a <i>Source Capabilities</i> Message. Sinks expose their power requirements by sending a <i>Sink Capabilities</i> Message. Both are composed of a number of 32-bit Power Data Objects (see Table 6-7).</p> <p style="text-align: center;"><u>Table 6-7 Power Data Object</u></p> <table><tr><th>Bit(s)</th><th colspan="2">Description</th></tr><tr><td rowspan="5">B31...30</td><th>Value</th><th>Parameter</th></tr><tr><td>00b</td><td><u>Fixed supply (<math>V_{min} = V_{max}</math>)</u></td></tr><tr><td>01b</td><td>Battery</td></tr><tr><td>10b</td><td>Variable Supply (non-Battery)</td></tr><tr><td>11b</td><td><u>Augmented Power Data Object (APDO)</u></td></tr><tr><td>B29...0</td><td colspan="2">Specific Power Capabilities are described by the PDOs in the following sections.</td></tr></table> <p><u>The Augmented Power Data Object (APDO) is defined to allow support for more than the four PDO types by extending the Power Data Object field from 2 to 4 bits when the B31...B30 are 11b. The generic APDO structure is shown in Table 6-8.</u></p> <p style="text-align: center;"><u>Table 6-8 Augmented Power Data Object</u></p> <table><tr><th>Bit(s)</th><th>Description</th></tr><tr><td>B31...30</td><td>11b – Augmented Power Datat Object (APDO)</td></tr><tr><td>B29...28</td><td>00b – Programmable Power Supply 01b-11b - <b>Reserved</b></td></tr><tr><td>B27...0</td><td>Specific Power Capabilities are described by the APDOs in the following sections.</td></tr></table> <p><i>Source: USB PD 3.0 specification.PDF</i></p>	Bit(s)	Description		B31...30	Value	Parameter	00b	<u>Fixed supply (<math>V_{min} = V_{max}</math>)</u>	01b	Battery	10b	Variable Supply (non-Battery)	11b	<u>Augmented Power Data Object (APDO)</u>	B29...0	Specific Power Capabilities are described by the PDOs in the following sections.		Bit(s)	Description	B31...30	11b – Augmented Power Datat Object (APDO)	B29...28	00b – Programmable Power Supply 01b-11b - <b>Reserved</b>	B27...0	Specific Power Capabilities are described by the APDOs in the following sections.
Bit(s)	Description																									
B31...30	Value	Parameter																								
	00b	<u>Fixed supply (<math>V_{min} = V_{max}</math>)</u>																								
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	10b	Variable Supply (non-Battery)																								
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B29...28	00b – Programmable Power Supply 01b-11b - <b>Reserved</b>																									
B27...0	Specific Power Capabilities are described by the APDOs in the following sections.																									
determine whether the charger identification is in a list of charger identifications belonging to the plurality of authorized chargers;	The accused product is configured to determine whether the charger identification (e.g., specification revision value and capabilities of the charger as indicated in the Source Capabilities message) is in a list of charger identifications belonging to the plurality of authorized chargers (e.g., specification revision values and source capabilities supported by the accused device)																									



## EXHIBIT 2

An Attach event or a Hard Reset **Shall** cause the detection of the applicable Specification Revision to be performed for both Ports and Cable Plugs according to the rules stated below:

When the Source Port first communicates with the Sink Port the Specification Revision field **Shall** be used as described by the following steps:

1. The Source Port sends a Source Capabilities Message to the Sink Port setting the Specification Revision field to the highest Revision of the Power Delivery Specification the Source Port supports.
2. The Sink Port responds with a Request Message setting the Specification Revision field to the highest Revision of the Power Delivery Specification the Sink Port supports that is equal to or lower than the Specification Revision received from the Source Port.
3. The Source and Sink Ports **Shall** use the Specification Revision in the Request Message from the Sink in step 2 in all subsequent communications until a Detach, Hard Reset, or Error Recovery happens.

#### 6.2.1.1.5 Specification Revision

The Specification Revision field **Shall** be one of the following values (except 11b):

- 00b – Revision 1.0
- 01b – Revision 2.0
- 10b – Revision 3.0
- 11b – **Reserved, Shall Not** be used

To ensure interoperability with existing USBPD Products, USBPD Products **Shall** support every PD Specification Revision starting from [USBPD 2.0] for SOP\*; the only exception to this is a VPD which **Shall Ignore** Messages sent with PD Specification Revision 2.0 and earlier.



## EXHIBIT 2

## 6.4.1.3 Sink Capabilities Message

A Sink Port **shall** report power levels it is able to operate at in a series of 32-bit Power Data Objects (see Table 6-7). These are returned as part of a **Sink Capabilities** Message in response to a **Get\_Sink\_Cap** Message (see Figure 6-12). This is similar to that used for Source Port capabilities with equivalent Power Data Objects for Fixed, Variable and Battery Supplies as defined in this section. Power Data Objects are used to convey the Sink Port's operational power requirements including Dual-Role Power Ports presently operating as a Source.

Each Power Data Object **shall** describe a specific Sink operational power level, such as a Battery (e.g. 2.8-4.1V) or a fixed power supply (e.g. 12V). The **Number of Data Objects** field in the Message Header **shall** define the number of Power Data Objects that follow the Message Header in a Data Message.

All Sinks **shall** minimally offer one Power Data Object with a power level at which the Sink can operate. A Sink **shall** **Not** offer multiple Power Data Objects of the same type (fixed, variable, Battery) and the same voltage but **shall** instead offer one Power Data Object with the highest available current for that Sink capability and voltage.

All Sinks **shall** include one Power Data Object that reports **vSafe5V** even if they require additional power to operate fully. In the case where additional power is required for full operation the Higher Capability bit **shall** be set.

## EXHIBIT 2

2.6.2 Sink Operation

- At Attach (no PD Connection or Contract):
  - Sink detects Source Attachment through the presence of *vSafe5V*.
  - For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.
  - Once the Sink detects the presence of *vSafe5V* on *V<sub>BUS</sub>* it waits for a *Source Capabilities* Message indicating the presence of a PD capable Source.
  - If the Sink does not receive a *Source\_Capabilities* Message within *tTypeCSinkWaitCap* then it issues *Hard Reset* Signaling in order to cause the Source Port to send a *Source\_Capabilities* Message if the Source Port is PD capable.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.
- Establishing PD Connection (no PD Connection or Contract):
  - The Sink receives a *Source\_Capabilities* Message and responds with a *GoodCRC* Message.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.
- Establishing Explicit Contract (PD Connection but no Explicit Contract or Implicit Contract after a Power Role Swap or Fast Role Swap):
  - The Sink receives a *Source\_Capabilities* Message from the Source and responds with a *Request* Message. If this is a *Valid* request the Sink receives an *Accept* Message followed by a *PS\_RDY* Message when the Source's power supply is ready to source power at the agreed level. At this point the Source and Sink have entered into an Explicit Contract:
    - The Sink Port may request one of the capabilities offered by the Source, even if this is the *vSafe5V* output offered by *[USB 2.0]*, *[USB 3.2]*, *[USB Type-C 2.0]* or *[USBBC 1.2]*, in order to enable future power negotiation:
      - ◆ A Sink not requesting any capability with a *Request* Message results in an error.
    - A Sink unable to fully operate at the offered capabilities requests the default capability but indicates that it would prefer another power level and provide a physical indication of the failure to the end user (e.g. using an LED).
    - A Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.

*Source: USB PD 3.0 specification.PDF*

## EXHIBIT 2

	<p>The accused product receives energy from a charger (e.g., authorized charger) which provides source capabilities and supported specification revision value. In case the charger doesn't provide a supported specification revision value, i.e., if the charger complies with USB PD 1.0, or the charger doesn't provide source capabilities requested by the accused device, the accused product will not consider the charger as an authorized charger and communication gets fail. The communication between charger and the accused product comes to a USB default operation at zero volts.</p> <p style="text-align: center;">6.2.1.1.5 Specification Revision</p> <p>The <u>Specification Revision</u> field <b>Shall</b> be one of the following values (except 11b):</p> <ul style="list-style-type: none"> <li>• 00b –Revision 1.0</li> <li>• <u>01b –Revision 2.0</u></li> <li>• <u>10b – Revision 3.0</u></li> <li>• 11b – <b>Reserved, Shall Not</b> be used</li> </ul> <p><u>To ensure interoperability with existing USBPD Products, USBPD Products <b>Shall</b> support every PD Specification Revision starting from [USBPD 2.0] for <b>SOP*</b>; the only exception to this is a VPD which <b>Shall Ignore</b> Messages sent with PD Specification Revision 2.0 and earlier.</u></p>
--	--

## EXHIBIT 2

**2.6.2 Sink Operation**

- At Attach (no PD Connection or Contract):
  - Sink detects Source Attachment through the presence of *vSafe5V*.
  - For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.
  - Once the Sink detects the presence of *vSafe5V* on  $V_{BUS}$  it waits for a *Source Capabilities* Message indicating the presence of a PD capable Source.
  - If the Sink does not receive a *Source\_Capabilities* Message within *tTypeCSinkWaitCap* then it issues *Hard Reset* Signaling in order to cause the Source Port to send a *Source\_Capabilities* Message if the Source Port is PD capable.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.
- Establishing PD Connection (no PD Connection or Contract):
  - The Sink receives a *Source\_Capabilities* Message and responds with a *GoodCRC* Message.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.
- Establishing Explicit Contract (PD Connection but no Explicit Contract or Implicit Contract after a Power Role Swap or Fast Role Swap):
  - The Sink receives a *Source\_Capabilities* Message from the Source and responds with a *Request* Message. If this is a *Valid* request the Sink receives an *Accept* Message followed by a *PS\_RDY* Message when the Source's power supply is ready to source power at the agreed level. At this point the Source and Sink have entered into an Explicit Contract:
    - The Sink Port may request one of the capabilities offered by the Source, even if this is the *vSafe5V* output offered by *[USB 2.0]*, *[USB 3.2]*, *[USB Type-C 2.0]* or *[USBBC 1.2]*, in order to enable future power negotiation:
      - ◆ A Sink not requesting any capability with a *Request* Message results in an error.
    - A Sink unable to fully operate at the offered capabilities requests the default capability but indicates that it would prefer another power level and provide a physical indication of the failure to the end user (e.g. using an LED).
    - A Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.

## EXHIBIT 2

## 8.3.3.2.8 PE\_SRC\_Capability\_Response State

The Policy Engine **Shall** enter the **PE\_SRC\_Capability\_Response** state if there is a Request received from the Sink that cannot be met based on the present capabilities. When the present Contract is not within the present capabilities it is regarded as **Invalid** and a Hard Reset will be triggered.

## 7.1.5 Response to Hard Resets

**Hard Reset** Signaling indicates a communication failure has occurred and the Source **Shall** stop driving VCONN, **Shall** remove Rp from the VCONN pin and **Shall** drive V<sub>BUS</sub> to **vSafe0V** as shown in Figure 7-10. The USB connection **May** reset during a Hard Reset since the V<sub>BUS</sub> voltage will be less than **vSafe5V** for an extended period of time. After establishing the **vSafe0V** voltage condition on V<sub>BUS</sub>, the Source **Shall** wait **tSrcRecover** before re-applying VCONN and restoring V<sub>BUS</sub> to **vSafe5V**. A Source **Shall** conform to the VCONN timing as specified in [USB Type-C 2.0].

Device operation during and after a Hard Reset is defined as follows:

- Self-powered devices **Should Not** disconnect from USB during a Hard Reset (see Section 9.1.2).
- Self-powered devices operating at more than **vSafe5V** **May Not** maintain full functionality after a **Hard Reset**.
- Bus powered devices will disconnect from USB during a Hard Reset due to the loss of their power source.

When a Hard Reset occurs the Source **Shall** stop driving VCONN, **Shall** remove Rp from the VCONN pin and **Shall** start to transition the V<sub>BUS</sub> voltage to **vSafe0V** either:

- **tPSHardReset** after the last bit of the **Hard Reset** Signaling has been received from the Sink or
- **tPSHardReset** after the last bit of the **Hard Reset** Signaling has been sent by the Source.

The Source **Shall** meet both **tSafe5V** and **tSafe0V** relative to the start of the voltage transition as shown in Figure 7-10.

**vSafe0V**

Safe operating voltage at “zero volts”.

Source: USB PD 3.0 specification.PDF

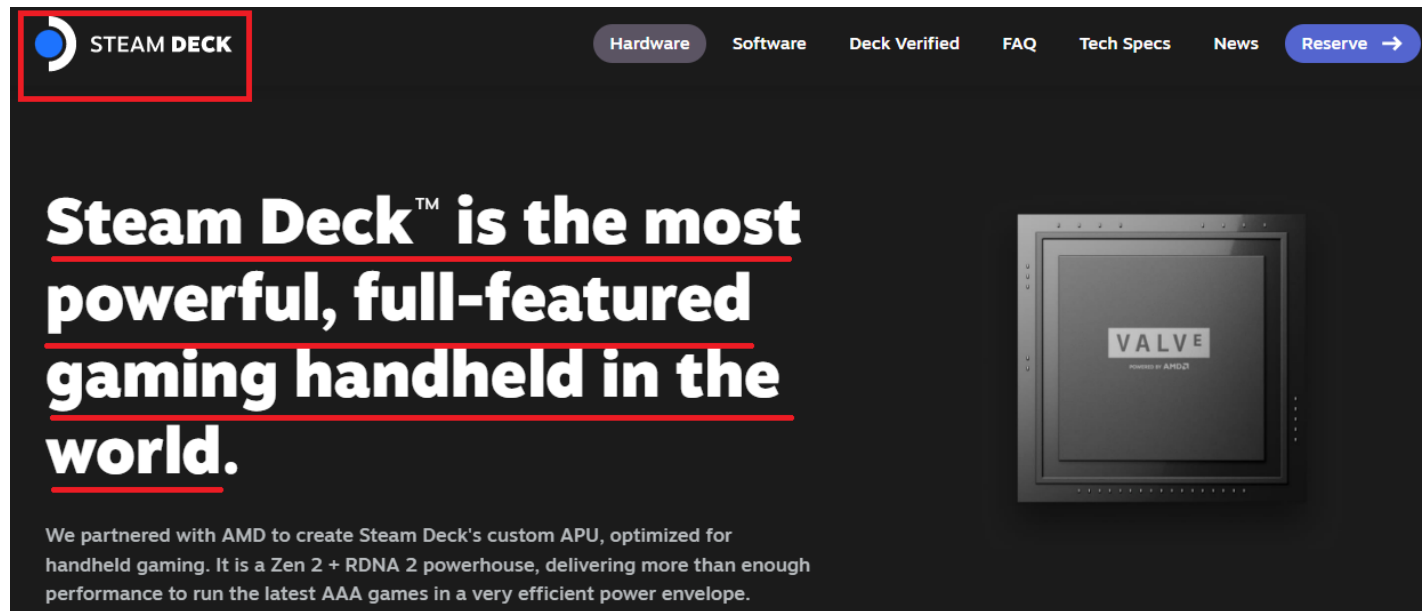
in response to determining that the charger identification is in the list of charger identifications:

The accused product practices, in response to determining that the charger identification (e.g., identification information related to specification revision value as well as capabilities indicated in the Source Capabilities message sent by the charger) is in a list of charger identifications (e.g., specification revision values and

## EXHIBIT 2

receive the energy from the charger;

capabilities supported by the accused device), receiving the energy from the charger (e.g., USB PD compliant charger).



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<https://www.steamdeck.com/en/hardware>

## Power

Input

45W USB Type-C PD3.0 power supply

Battery

40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>

EXHIBIT 2

Power	
Input	<u>45W USB Type-C PD3.0 power supply</u>
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>



Source: Steam deck external image



## EXHIBIT 2

An Attach event or a Hard Reset **shall** cause the detection of the applicable Specification Revision to be performed for both Ports and Cable Plugs according to the rules stated below:

When the Source Port first communicates with the Sink Port the Specification Revision field **shall** be used as described by the following steps:

1. The Source Port sends a **Source Capabilities** Message to the Sink Port setting the **Specification Revision** field to the highest Revision of the Power Delivery Specification the Source Port supports.
2. The Sink Port responds with a **Request** Message setting the **Specification Revision** field to the highest Revision of the Power Delivery Specification the Sink Port supports that is equal to or lower than the **Specification Revision** received from the Source Port.
3. The Source and Sink Ports **shall** use the **Specification Revision** in the **Request** Message from the Sink in step 2 in all subsequent communications until a Detach, Hard Reset, or Error Recovery happens.

#### 6.4.1.3 Sink Capabilities Message

A Sink Port **shall** report power levels it is able to operate at in a series of 32-bit Power Data Objects (see Table 6-7). These are returned as part of a **Sink Capabilities** Message in response to a **Get\_Sink\_Cap** Message (see Figure 6-12). This is similar to that used for Source Port capabilities with equivalent Power Data Objects for Fixed, Variable and Battery Supplies as defined in this section. Power Data Objects are used to convey the Sink Port's operational power requirements including Dual-Role Power Ports presently operating as a Source.

Each Power Data Object **shall** describe a specific Sink operational power level, such as a Battery (e.g. 2.8-4.1V) or a fixed power supply (e.g. 12V). The **Number of Data Objects** field in the Message Header **shall** define the number of Power Data Objects that follow the Message Header in a Data Message.

All Sinks **shall** minimally offer one Power Data Object with a power level at which the Sink can operate. A Sink **shall** **Not** offer multiple Power Data Objects of the same type (fixed, variable, Battery) and the same voltage but **shall** instead offer one Power Data Object with the highest available current for that Sink capability and voltage.

All Sinks **shall** include one Power Data Object that reports **vSafe5V** even if they require additional power to operate fully. In the case where additional power is required for full operation the Higher Capability bit **shall** be set.

## EXHIBIT 2

2.6.2 Sink Operation

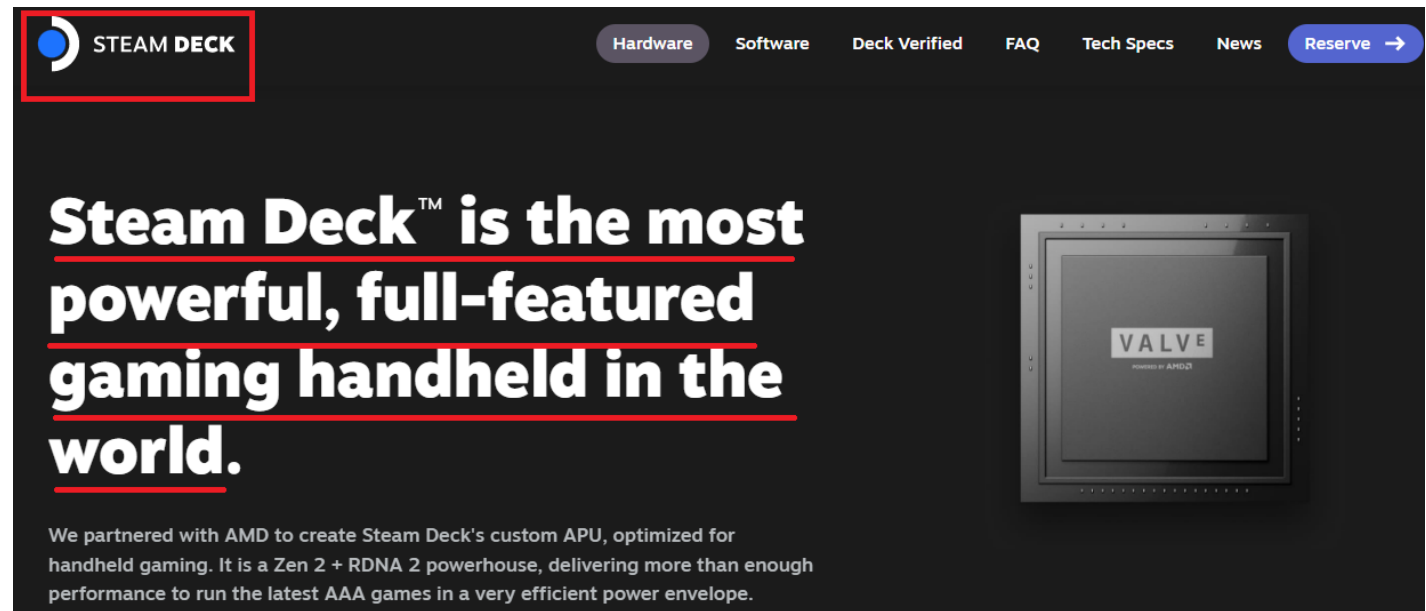
- At Attach (no PD Connection or Contract):
  - Sink detects Source Attachment through the presence of **vSafe5V**.
  - For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.
  - Once the Sink detects the presence of **vSafe5V** on  $V_{BUS}$  it waits for a **Source Capabilities** Message indicating the presence of a PD capable Source.
  - If the Sink does not receive a **Source Capabilities** Message within **tTypeCSinkWaitCap** then it issues **Hard Reset** Signaling in order to cause the Source Port to send a **Source Capabilities** Message if the Source Port is PD capable.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.
- Establishing PD Connection (no PD Connection or Contract):
  - The Sink receives a **Source Capabilities** Message and responds with a **GoodCRC** Message.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and **Discards** them.
- Establishing Explicit Contract (PD Connection but no Explicit Contract or Implicit Contract after a Power Role Swap or Fast Role Swap):
  - The Sink receives a **Source Capabilities** Message from the Source and responds with a **Request** Message. If this is a **Valid** request the Sink receives an **Accept** Message followed by a **PS\_RDY** Message when the Source's power supply is ready to source power at the agreed level. At this point the Source and Sink have entered into an Explicit Contract:
    - The Sink Port may request one of the capabilities offered by the Source, even if this is the **vSafe5V** output offered by **[USB 2.0]**, **[USB 3.2]**, **[USB Type-C 2.0]** or **[USBBC 1.2]**, in order to enable future power negotiation:
      - ◆ A Sink not requesting any capability with a **Request** Message results in an error.
    - A Sink unable to fully operate at the offered capabilities requests the default capability but indicates that it would prefer another power level and provide a physical indication of the failure to the end user (e.g. using an LED).
    - A Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and **Discards** them.

*Source: USB PD 3.0 specification.PDF*

## EXHIBIT 2

generate, using the converter, the power from the energy received from the charger;

The accused product practices generating, using the converter (e.g., converting power from USB to battery charging), the power from the energy received from the charger (e.g., USB PD charger).



<https://www.steamdeck.com/en/hardware>

EXHIBIT 2



<https://www.steamdeck.com/en/hardware>

## Power

Input

45W USB Type-C PD3.0 power supply

Battery

40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>

EXHIBIT 2

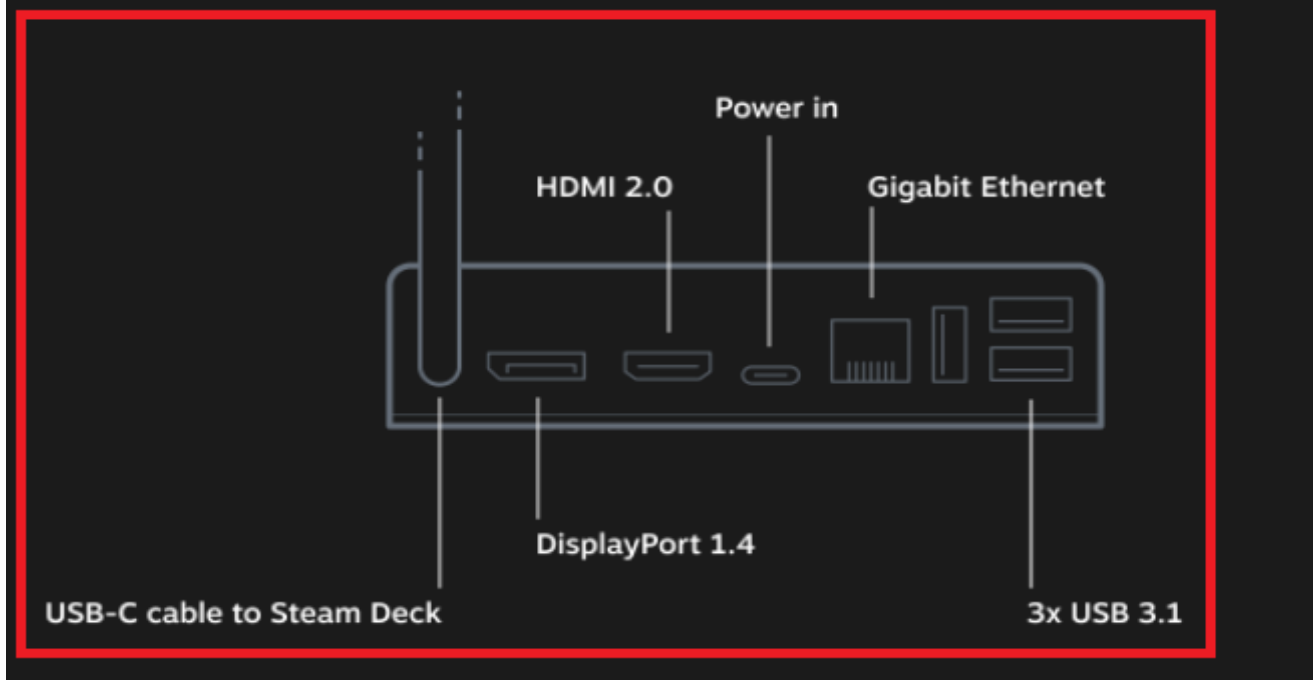
Power	
Input	<u>45W USB Type-C PD3.0 power supply</u>
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>

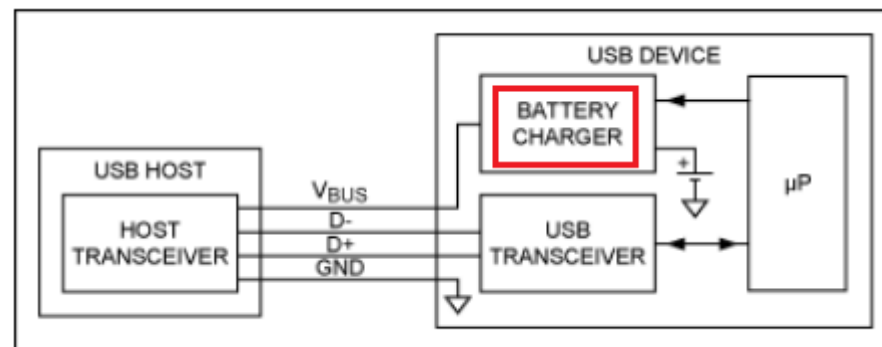


Source: Steam deck external image

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<https://www.steamdeck.com/en/tech>

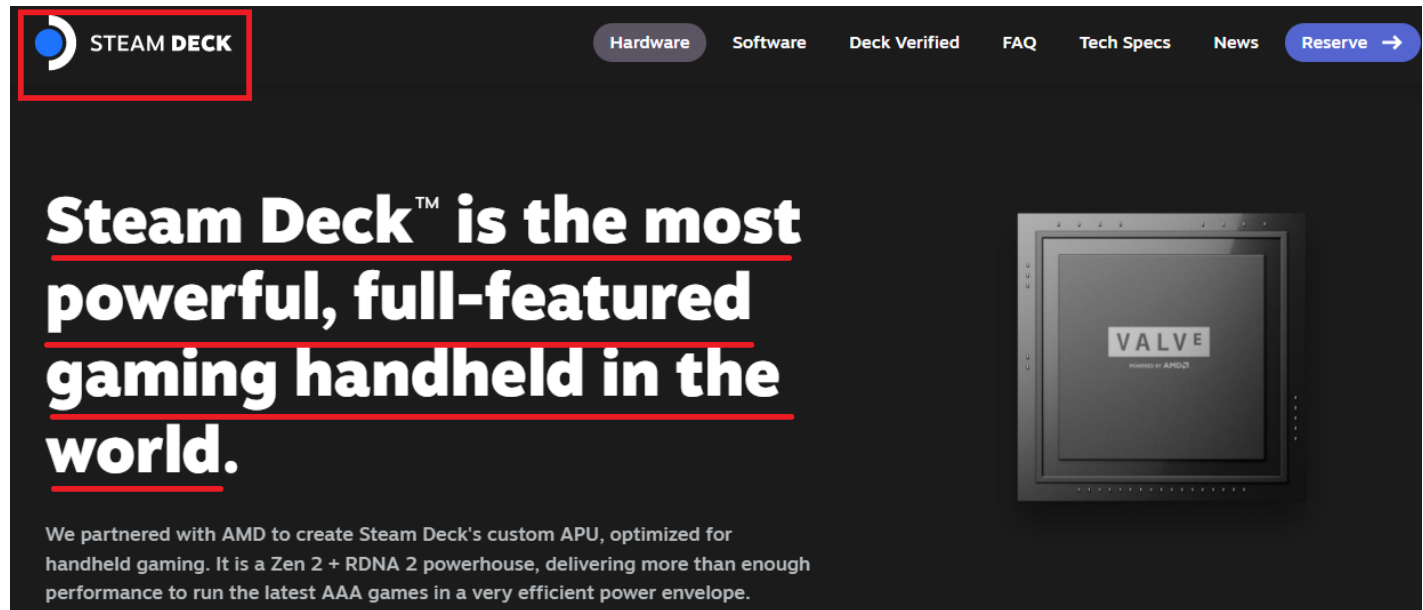


<https://www.electronicproducts.com/the-basics-of-usb-battery-charging-a-survival-guide/#>

## EXHIBIT 2

charge the battery using the power received from the converter; and use the battery to power the electronic circuitry.

The accused product practices charging the battery (e.g., battery of the accused product) using the power received from the converter (e.g., converting power from USB to battery charging) and using the battery to power the electronic circuitry (e.g., display of the accused product).



<https://www.steamdeck.com/en/hardware>



EXHIBIT 2



<https://www.steamdeck.com/en/hardware>

## Power

Input

45W USB Type-C PD3.0 power supply

Battery

40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>



EXHIBIT 2

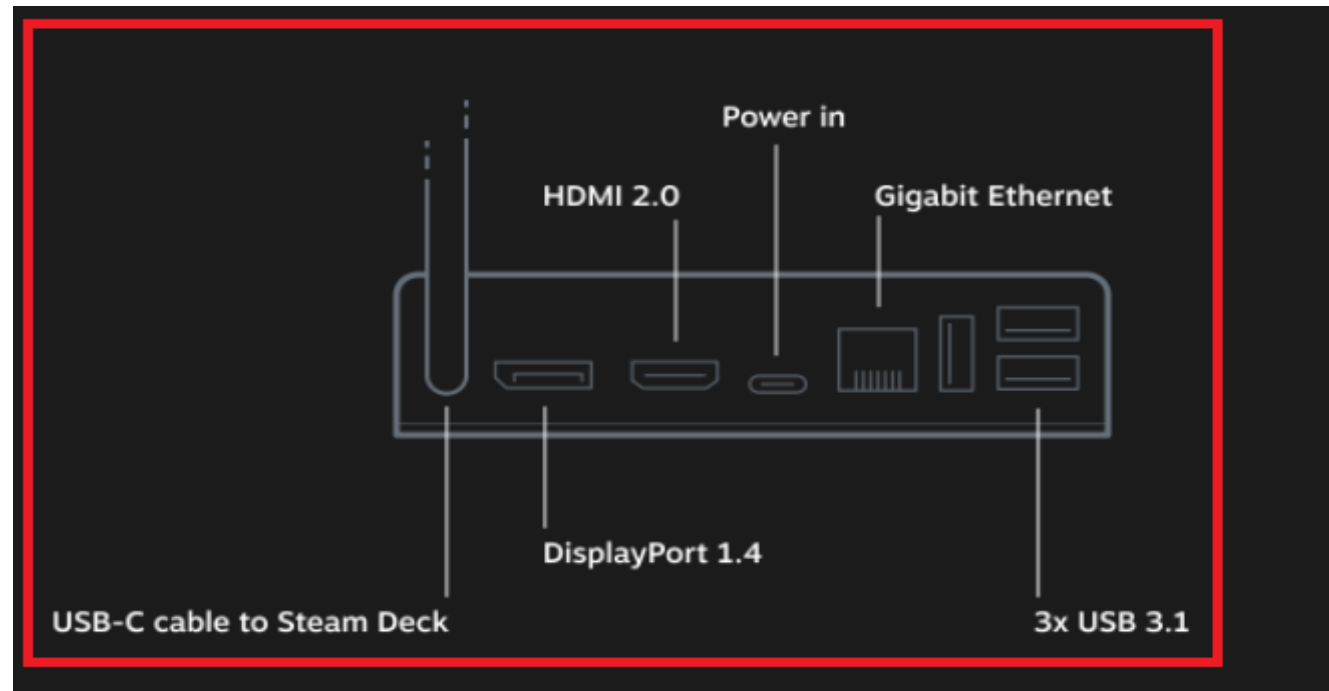
Power	
Input	<u>45W USB Type-C PD3.0 power supply</u>
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>

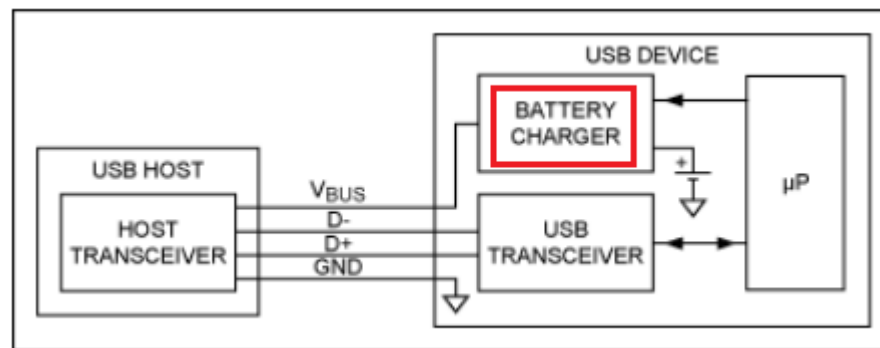


Source: Steam deck external image

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<https://www.steamdeck.com/en/tech>



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<https://www.electronicproducts.com/the-basics-of-usb-battery-charging-a-survival-guide/#>

As shown below, the accused product comprises a rechargeable battery.



Source: Steam deck internal image

As shown below, the accused product comprises display which is powered by the battery of the accused product.

EXHIBIT 2



<https://www.steamdeck.com/en/hardware>

## EXHIBIT 2

	<div> <b>Display</b> </div> <table> <tr> <td>Resolution</td><td>1280 x 800px (16:10 aspect ratio)</td></tr> <tr> <td>Type</td><td>Optically bonded IPS LCD for enhanced readability</td></tr> <tr> <td>Display size</td><td>7" diagonal</td></tr> <tr> <td>Brightness</td><td>400 nits typical</td></tr> <tr> <td>Refresh rate</td><td>60Hz</td></tr> <tr> <td>Touch enabled</td><td>Yes</td></tr> <tr> <td>Sensors</td><td>Ambient light sensor</td></tr> </table> <p><a href="https://www.steamdeck.com/en/tech">https://www.steamdeck.com/en/tech</a></p>	Resolution	1280 x 800px (16:10 aspect ratio)	Type	Optically bonded IPS LCD for enhanced readability	Display size	7" diagonal	Brightness	400 nits typical	Refresh rate	60Hz	Touch enabled	Yes	Sensors	Ambient light sensor
Resolution	1280 x 800px (16:10 aspect ratio)														
Type	Optically bonded IPS LCD for enhanced readability														
Display size	7" diagonal														
Brightness	400 nits typical														
Refresh rate	60Hz														
Touch enabled	Yes														
Sensors	Ambient light sensor														
<p>11. A method of charging a battery-operated device including a battery, an electronic circuitry configured to be powered by the battery, and a converter configured to receive energy from any of a plurality of authorized chargers, and generate power from the energy for charging the battery using the power, the method comprising:</p>	<p>The accused product practices method of charging a battery-operated device (e.g., the accused product) including a battery, an electronic circuitry (e.g., circuitry for display etc.) configured to be powered by the battery, and a converter (e.g., converting power from USB to battery charging) configured to receive energy (e.g., power from USB) configured to receive energy from any of a plurality of authorized chargers (e.g., a plurality of chargers compliant with USB PD 2.0 and USB PD 3.0 standards), and generate power from the energy for charging the battery (e.g., battery of the accused product) using the power.</p>														

EXHIBIT 2



	<div><div><div> STEAM DECK</div><div><div>Hardware</div><div>Software</div><div>Deck Verified</div><div>FAQ</div><div>Tech Specs</div><div>News</div><div>Reserve →</div></div></div><div><h1><u>Steam Deck™ is the most powerful, full-featured gaming handheld in the world.</u></h1><p>We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope.</p></div><div></div></div> <div><p><a href="https://www.steamdeck.com/en/hardware">https://www.steamdeck.com/en/hardware</a></p></div>
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EXHIBIT 2



<https://www.steamdeck.com/en/hardware>

## Power

Input

45W USB Type-C PD3.0 power supply

Battery

40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>

EXHIBIT 2

Power	
Input	<u>45W USB Type-C PD3.0 power supply</u>
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>



Source: Steam deck external image



## EXHIBIT 2



Source: Steam deck internal image

As shown below, the accused product comprises display which is powered by the battery of the accused product.

EXHIBIT 2




<https://www.steamdeck.com/en/hardware>

## EXHIBIT 2

	<b>Display</b>	
	Resolution	1280 x 800px (16:10 aspect ratio)
	Type	Optically bonded IPS LCD for enhanced readability
	Display size	7" diagonal
	Brightness	400 nits typical
	Refresh rate	60Hz
	Touch enabled	Yes
	Sensors	Ambient light sensor
<a href="https://www.steamdeck.com/en/tech">https://www.steamdeck.com/en/tech</a>		
<p>The accused product charges its battery in compliance with USB PD 3.0 charging standard. The USB PD 3.0 standard provides the same output power support as the USB PD 2.0 and in addition provides programmable power supply (PPS) and is backward compatible with USB PD 2.0 for charging the battery.</p>		


## EXHIBIT 2

STEAM DECK

HardwareSoftwareDeck VerifiedFAQTech SpecsNewsReserve →

# Steam Deck™ is the most powerful, full-featured gaming handheld in the world.

We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope.



<https://www.steamdeck.com/en/hardware>

## Power

Input	45W USB Type-C PD3.0 power supply
<b>Battery</b>	<u>40Whr battery. 2 - 8 hours of gameplay</u>

<https://www.steamdeck.com/en/tech>

EXHIBIT 2

Power	
Input	<u>45W USB Type-C PD3.0 power supply</u>
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>



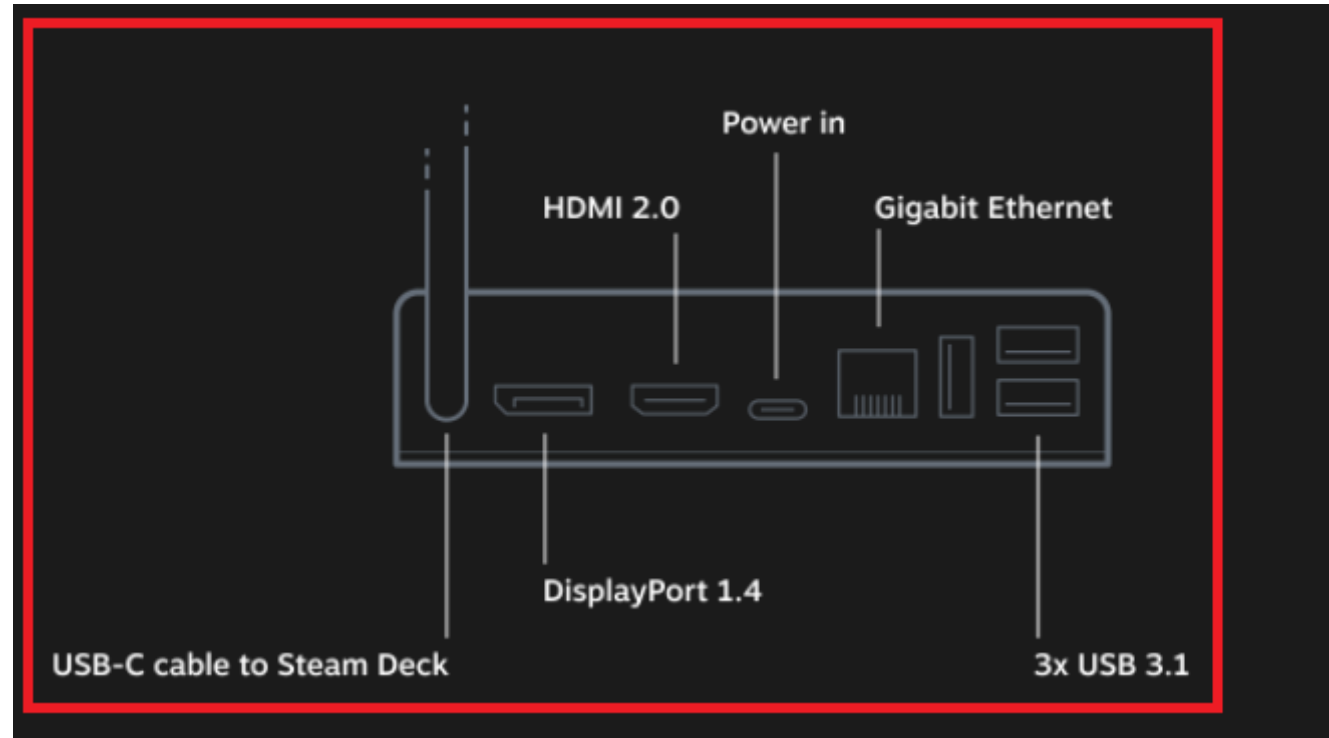
Source: Steam deck external image

## EXHIBIT 2

Version	USB BC 1.2	USB PD 1.0	USB PD 2.0	USB PD 3.0	USB PD 3.0 PPS	USB PD 3.1
Release date	2010	2012	2014	2015	2017	2021
USB type	USB Type-A	USB Type-A, USB Type-B	USB Type-C	USB Type-C	USB Type-C	USB Type-C
Output support	5V1, 5A		5V 3A, 9V 3A, 15V 3A, 20V 2.25A, 20V 3A, 20V 5A	5V 3A, 9V 3A, 15V 3A, 20V 2.25A, 20V 3A, 20V 5A	5V 3A, 9V 3A, 15V 3A, 20V 2.25A, 20V 3A, 20V 5A PPS: 3.3V-5.9V 3A, 3.3-11V 3A, 3.3-16V 3A, 3.3-21V 3A, 3.3-21V 3A, 3.3-21V 5A	5V 3A, 9V 3A, 15V 3A, 20V 3A, 20V 5A PPS: 3.3V-5.9V 3A, 3.3-11V 3A, 3.3-16V 3A, 3.3-21V 3A, 3.3-21V 5A AVS: 15-28V 5A, 15-36V 5A, 15-48V 5A

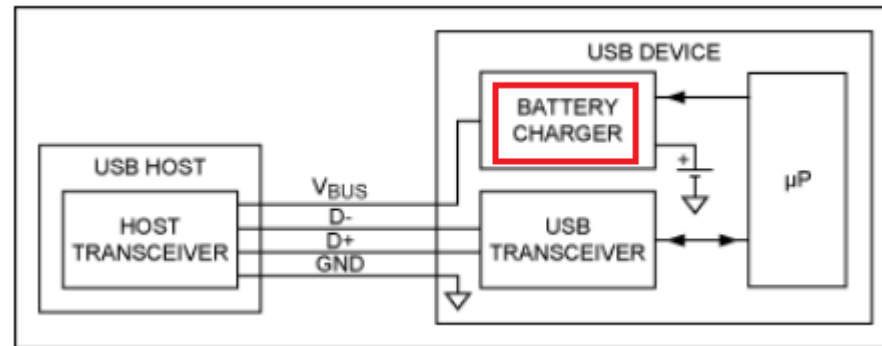
<https://www.thephonetalks.com/usb-pd-2-0-vs-3-0-vs-3-1/>

EXHIBIT 2



<https://www.steamdeck.com/en/tech>

## EXHIBIT 2



<https://www.electronicproducts.com/the-basics-of-usb-battery-charging-a-survival-guide/#>

### 2.3 Compatibility with Revision 2.0

Revision 3.0 of the USB Power Delivery specification is designed to be fully interoperable with [USBPD 2.0] systems using BMC signaling over the [USB Type-C 2.0] connector and to be compatible with Revision 2.0 hardware.

This specification mandates that all Revision 3.0 systems fully support Revision 2.0 operation. They must discover the supported Revision used by their Port Partner and any connected Cable Plugs and revert to operation using the lowest common Revision number (see Section 6.2.1.1.5).

This specification defines Extended Messages containing data of up to 260 bytes (see Section 6.2.1.2). These Messages will be larger than expected by existing PHY HW. To accommodate Revision 2.0 based systems a Chunking mechanism is mandated such that Messages are limited to Revision 2.0 sizes unless it is discovered that both systems support the longer Message lengths.

*Source: USB PD 3.0 specification.PDF*

The accused product receives energy from a charger (e.g., an authorized charger complying with USB PD 2.0 or USB PD 3.0) which provides messages according to USB PD standards to indicate its charging capabilities and specification revision value. After selection of the common specification revision level and negotiation of power requirements, it generates power for charging the battery from the received energy.



## EXHIBIT 2

## 6.2.1.1.5 Specification Revision

The Specification Revision field **Shall** be one of the following values (except 11b):

- 00b – Revision 1.0
- 01b – Revision 2.0
- 10b – Revision 3.0
- 11b – **Reserved, Shall Not** be used

To ensure interoperability with existing USBPD Products, USBPD Products **Shall** support every PD Specification Revision starting from [USBPD 2.0] for SOP\*; the only exception to this is a VPD which **Shall Ignore** Messages sent with PD Specification Revision 2.0 and earlier.

After a physical or logical (USB Type-C® Error Recovery) Attach, a Port discovers the common Specification Revision level between itself and its Port Partner and/or the Cable Plug(s), and uses this Specification Revision level until a Detach, Hard Reset or Error Recovery happens.

After detection of the Specification Revision to be used, all PD communications **Shall** comply completely with the relevant revision of the PD specification.

An Attach event or a Hard Reset **Shall** cause the detection of the applicable Specification Revision to be performed for both Ports and Cable Plugs according to the rules stated below:

When the Source Port first communicates with the Sink Port the Specification Revision field **Shall** be used as described by the following steps:

1. The Source Port sends a Source Capabilities Message to the Sink Port setting the Specification Revision field to the highest Revision of the Power Delivery Specification the Source Port supports.
2. The Sink Port responds with a Request Message setting the Specification Revision field to the highest Revision of the Power Delivery Specification the Sink Port supports that is equal to or lower than the Specification Revision received from the Source Port.
3. The Source and Sink Ports **Shall** use the Specification Revision in the Request Message from the Sink in step 2 in all subsequent communications until a Detach, Hard Reset, or Error Recovery happens.

## EXHIBIT 2

Table 6-1 Message Header

Bit(s)	Start of Packet	Field Name	Reference
15	SOP*	<i>Extended</i>	Section 6.2.1.1.1
14...12	SOP*	<i>Number of Data Objects</i>	Section 6.2.1.1.2
11...9	SOP*	<i>MessageID</i>	Section 6.2.1.1.3
8	SOP only	<i>Port Power Role</i>	Section 6.2.1.1.4
	SOP'/SOP''	<i>Cable Plug</i>	Section 6.2.1.1.7
7...6	SOP*	<i>Specification Revision</i>	Section 6.2.1.1.5
5	SOP only	<i>Port Data Role</i>	Section 6.2.1.1.6
	SOP'/SOP''	<i>Reserved</i>	Section 1.4.2.10
4...0	SOP*	<i>Message Type</i>	Section 6.2.1.1.8

2.6.2 Sink Operation

- **At Attach (no PD Connection or Contract):**
  - Sink detects Source Attachment through the presence of *vSafe5V*.
  - For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.
  - Once the Sink detects the presence of *vSafe5V* on  $V_{BUS}$  it waits for a *Source\_Capabilities* Message indicating the presence of a PD capable Source.
  - If the Sink does not receive a *Source\_Capabilities* Message within *tTypeCSinkWaitCap* then it issues *Hard Reset* Signaling in order to cause the Source Port to send a *Source\_Capabilities* Message if the Source Port is PD capable.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.
- **Establishing PD Connection (no PD Connection or Contract):**
  - The Sink receives a *Source\_Capabilities* Message and responds with a *GoodCRC* Message.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.

## EXHIBIT 2

## 6.4.1.2 Source\_Capabilities Message

A Source Port **Shall** report its capabilities in a series of 32-bit Power Data Objects (see Table 6-7) as part of a Source\_Capabilities Message (see Figure 6-12). Power Data Objects are used to convey a Source Port's capabilities to provide power including Dual-Role Power ports presently operating as a Sink.

Each Power Data Object **Shall** describe a specific Source capability such as a Battery (e.g. 2.8-4.1V) or a fixed power supply (e.g. 12V) at a maximum allowable current. The **Number of Data Objects** field in the Message Header **Shall** define the number of Power Data Objects that follow the Message Header in a Data Message. All Sources **Shall** minimally offer one Power Data Object that reports **vSafe5V**. A Source **Shall Not** offer multiple Power Data Objects of the same type (fixed, variable, Battery) and the same voltage but **Shall** instead offer one Power Data Object with the highest available current for that Source capability and voltage.

Sinks with Accessory Support do not source  $V_{BUS}$  (see [USB Type-C 2.0]). Sinks with Accessory Support are still considered Sources when sourcing  $V_{CONN}$  to an Accessory even though  $V_{BUS}$  is not applied; in this case they **Shall** advertise **vSafe5V** with the Maximum Current set to 0mA in the first Power Data Object. The main purpose of this is to enable the Sink with Accessory Support to get into the **PE\_SRC\_Ready** State in order to enter an Alternate Mode.

A Sink **Shall** evaluate every Source\_Capabilities Message it receives and Shall respond with a Request Message. If its power consumption exceeds the Source's capabilities it **Shall** re-negotiate so as not to exceed the Source's most recently advertised capabilities.

A Sink that evaluates the Source\_Capabilities Message it receives and identifies a PPS APDO Shall periodically re-request the PPS APDO at least every tPPSRequest until either:

## EXHIBIT 2

**6.4.1 Capabilities Message**

A Capabilities Message (Source Capabilities Message or Sink Capabilities Message) **shall** have at least one Power Data Object for vSafe5V. The Capabilities Message **shall** also contain the sending Port's information followed by up to 6 additional Power Data Objects. Power Data Objects in a Capabilities Message **shall** be sent in the following order:

1. The vSafe5V Fixed Supply Object **shall** always be the first object.
2. The remaining Fixed Supply Objects, if present, **shall** be sent in voltage order; lowest to highest.
3. The Battery Supply Objects, if present **shall** be sent in Minimum Voltage order; lowest to highest.
4. The Variable Supply (non-Battery) Objects, if present, **shall** be sent in Minimum Voltage order; lowest to highest.
5. The Programmable Power Supply Objects, if present, **shall** be sent in Maximum Voltage order; lowest to highest.

Figure 6-12 Example Capabilities Message with 2 Power Data Objects

Header	Object1	Object2
No. of Data Objects = 2		

In Figure 6-12, the Number of Data Objects field is 2: vSafe5V plus one other voltage.

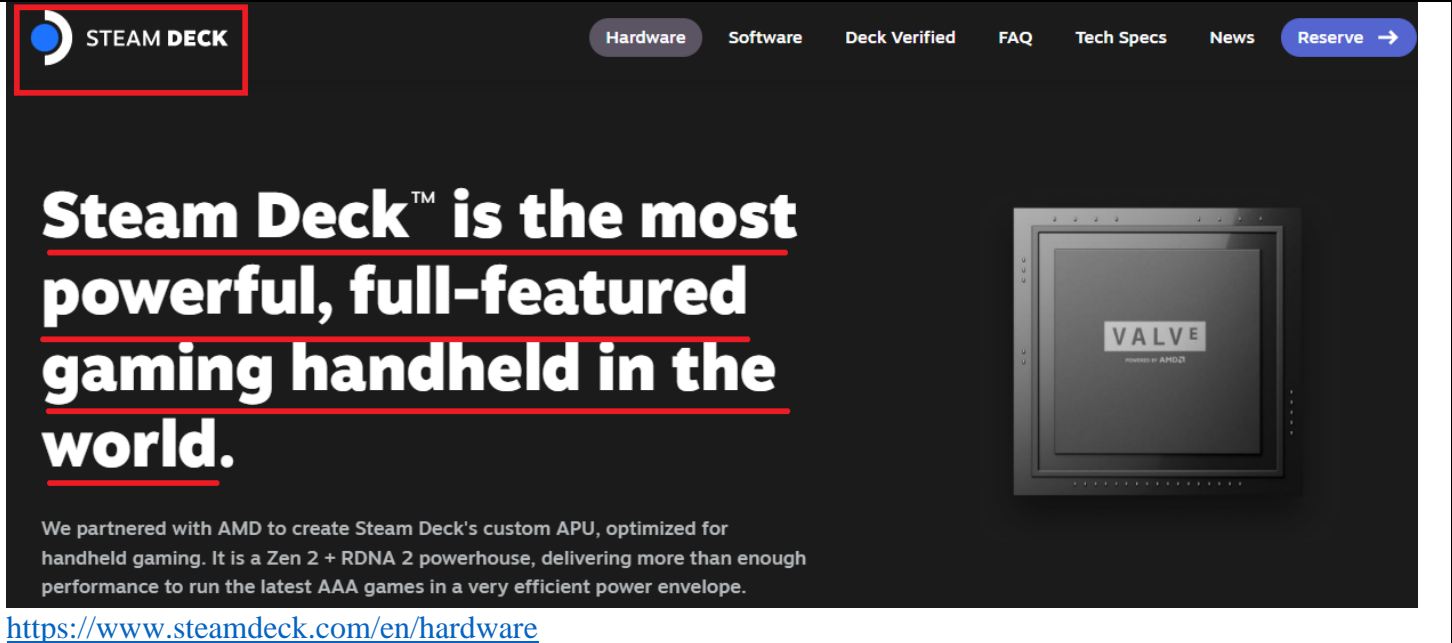
Power Data Objects (PDO) and Augmented Power Data Objects (APDO) are identified by the Message Header's Type field. They are used to form Source Capabilities Messages and Sink Capabilities Messages.

## EXHIBIT 2

	<p>Sources expose their power capabilities by sending a <u>Source Capabilities</u> Message. Sinks expose their power requirements by sending a <u>Sink Capabilities</u> Message. Both are composed of a number of 32-bit Power Data Objects (see Table 6-7).</p> <p style="text-align: center;"><u>Table 6-7 Power Data Object</u></p> <table border="1"> <thead> <tr> <th>Bit(s)</th><th>Description</th></tr> </thead> <tbody> <tr> <td rowspan="5">B31...30</td><td>Value</td></tr> <tr> <td>00b</td></tr> <tr> <td>01b</td></tr> <tr> <td>10b</td></tr> <tr> <td>11b</td></tr> <tr> <td>B29...0</td><td>Specific Power Capabilities are described by the PDOs in the following sections.</td></tr> </tbody> </table> <p>The Augmented Power Data Object (APDO) is defined to allow support for more than the four PDO types by extending the Power Data Object field from 2 to 4 bits when the B31...B30 are 11b. The generic APDO structure is shown in Table 6-8.</p> <p style="text-align: center;"><u>Table 6-8 Augmented Power Data Object</u></p> <table border="1"> <thead> <tr> <th>Bit(s)</th><th>Description</th></tr> </thead> <tbody> <tr> <td>B31...30</td><td>11b – Augmented Power Datat Object (APDO)</td></tr> <tr> <td>B29...28</td><td>00b – Programmable Power Supply</td></tr> <tr> <td></td><td>01b-11b - <b>Reserved</b></td></tr> <tr> <td>B27...0</td><td>Specific Power Capabilities are described by the APDOs in the following sections.</td></tr> </tbody> </table> <p><i>Source: USB PD 3.0 specification.PDF</i></p>	Bit(s)	Description	B31...30	Value	00b	01b	10b	11b	B29...0	Specific Power Capabilities are described by the PDOs in the following sections.	Bit(s)	Description	B31...30	11b – Augmented Power Datat Object (APDO)	B29...28	00b – Programmable Power Supply		01b-11b - <b>Reserved</b>	B27...0	Specific Power Capabilities are described by the APDOs in the following sections.
Bit(s)	Description																				
B31...30	Value																				
	00b																				
	01b																				
	10b																				
	11b																				
B29...0	Specific Power Capabilities are described by the PDOs in the following sections.																				
Bit(s)	Description																				
B31...30	11b – Augmented Power Datat Object (APDO)																				
B29...28	00b – Programmable Power Supply																				
	01b-11b - <b>Reserved</b>																				
B27...0	Specific Power Capabilities are described by the APDOs in the following sections.																				
<p>receiving a charger identification from a charger;</p> <p><b>Excerpt from US’246 [13:5-15]:</b>  <i>C. Power Transfer only from Authorized Masters</i>  <i>A slave prevents non-authorized masters from trying to charge it</i></p>	<p>The accused product practices receiving a charger identification (e.g., information related to capabilities of a charger as well as specification revision value supported by the charger as indicated in the Source Capabilities Message) from a charger.</p>																				

## EXHIBIT 2

or power it up (or networked servers from commanding masters to charge it or power it up) in some embodiments. Slaves store **identifying information about masters (or networked servers)** that are authorized to charge them. The stored information about authorized masters or networked servers includes one or more of the following information about the masters: the masters' media access control address (MAC ID), network IP address, name, serial number, product name and manufacturer, **capabilities**, etc.



The image is a screenshot of the Steam Deck product page. At the top, there is a navigation bar with the Steam Deck logo on the left, followed by links for Hardware, Software, Deck Verified, FAQ, Tech Specs, News, and a Reserve button with a right arrow. The main headline reads: "Steam Deck™ is the most powerful, full-featured gaming handheld in the world." Below this, a paragraph states: "We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope." To the right of the text is an image of the Steam Deck handheld device, which has a screen displaying the Valve logo and "powered by AMD". At the bottom of the page, there is a URL: <https://www.steamdeck.com/en/hardware>.



EXHIBIT 2



<https://www.steamdeck.com/en/hardware>

## Power

Input

45W USB Type-C PD3.0 power supply

Battery

40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>

EXHIBIT 2

Power	
Input	<u>45W USB Type-C PD3.0 power supply</u>
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>



Source: Steam deck external image



## EXHIBIT 2

An Attach event or a Hard Reset **shall** cause the detection of the applicable Specification Revision to be performed for both Ports and Cable Plugs according to the rules stated below:

When the Source Port first communicates with the Sink Port the Specification Revision field **shall** be used as described by the following steps:

1. The Source Port sends a Source Capabilities Message to the Sink Port setting the Specification Revision field to the highest Revision of the Power Delivery Specification the Source Port supports.
2. The Sink Port responds with a Request Message setting the Specification Revision field to the highest Revision of the Power Delivery Specification the Sink Port supports that is equal to or lower than the Specification Revision received from the Source Port.
3. The Source and Sink Ports **shall** use the Specification Revision in the Request Message from the Sink in step 2 in all subsequent communications until a Detach, Hard Reset, or Error Recovery happens.

Table 6-1 Message Header

Bit(s)	Start of Packet	Field Name	Reference
15	SOP*	<u>Extended</u>	Section 6.2.1.1.1
14...12	SOP*	<u>Number of Data Objects</u>	Section 6.2.1.1.2
11...9	SOP*	<u>MessageID</u>	Section 6.2.1.1.3
8	SOP only	<u>Port Power Role</u>	Section 6.2.1.1.4
	SOP'/SOP''	<u>Cable Plug</u>	Section 6.2.1.1.7
7...6	SOP*	<u>Specification Revision</u>	Section 6.2.1.1.5
5	SOP only	<u>Port Data Role</u>	Section 6.2.1.1.6
	SOP'/SOP''	<u>Reserved</u>	Section 1.4.2.10
4...0	SOP*	<u>Message Type</u>	Section 6.2.1.1.8

## EXHIBIT 2

	<p><b>2.6.2 Sink Operation</b></p> <ul style="list-style-type: none"> <li>• At Attach (no PD Connection or Contract): <ul style="list-style-type: none"> <li>○ Sink detects Source Attachment through the presence of <i>vSafe5V</i>.</li> <li>○ For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.</li> <li>○ Once the Sink detects the presence of <i>vSafe5V</i> on <math>V_{BUS}</math> it waits for a <i>Source_Capabilities</i> Message indicating <u>the presence of a PD capable Source</u>.</li> <li>○ <u>If the Sink does not receive a <i>Source_Capabilities</i> Message within <i>tTypeCSinkWaitCap</i> then it issues <i>Hard Reset</i> Signaling in order to cause the Source Port to send a <i>Source_Capabilities</i> Message if the Source Port is PD capable.</u></li> <li>○ The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.</li> </ul> </li> <li>• Establishing PD Connection (no PD Connection or Contract): <ul style="list-style-type: none"> <li>○ The Sink receives a <i>Source_Capabilities</i> Message and responds with a <i>GoodCRC</i> Message.</li> <li>○ The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and <i>Discards</i> them.</li> </ul> </li> </ul>
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## EXHIBIT 2

## 6.4.1.2 Source\_Capabilities Message

A Source Port **Shall** report its capabilities in a series of 32-bit Power Data Objects (see Table 6-7) as part of a Source\_Capabilities Message (see Figure 6-12). Power Data Objects are used to convey a Source Port's capabilities to provide power including Dual-Role Power ports presently operating as a Sink.

Each Power Data Object **Shall** describe a specific Source capability such as a Battery (e.g. 2.8-4.1V) or a fixed power supply (e.g. 12V) at a maximum allowable current. The **Number of Data Objects** field in the Message Header **Shall** define the number of Power Data Objects that follow the Message Header in a Data Message. All Sources **Shall** minimally offer one Power Data Object that reports **vSafe5V**. A Source **Shall Not** offer multiple Power Data Objects of the same type (fixed, variable, Battery) and the same voltage but **Shall** instead offer one Power Data Object with the highest available current for that Source capability and voltage.

Sinks with Accessory Support do not source  $V_{BUS}$  (see [USB Type-C 2.0]). Sinks with Accessory Support are still considered Sources when sourcing  $V_{CONN}$  to an Accessory even though  $V_{BUS}$  is not applied; in this case they **Shall** advertise **vSafe5V** with the Maximum Current set to 0mA in the first Power Data Object. The main purpose of this is to enable the Sink with Accessory Support to get into the **PE\_SRC\_Ready** State in order to enter an Alternate Mode.

A Sink **Shall** evaluate every Source\_Capabilities Message it receives and Shall respond with a Request Message. If its power consumption exceeds the Source's capabilities it **Shall** re-negotiate so as not to exceed the Source's most recently advertised capabilities.

A Sink that evaluates the Source\_Capabilities Message it receives and identifies a PPS APDO Shall periodically re-request the PPS APDO at least every tPPSRequest until either:

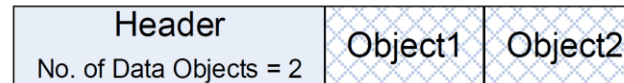
## EXHIBIT 2

**6.4.1 Capabilities Message**

A Capabilities Message (Source Capabilities Message or Sink Capabilities Message) **shall** have at least one Power Data Object for vSafe5V. The Capabilities Message **shall** also contain the sending Port's information followed by up to 6 additional Power Data Objects. Power Data Objects in a Capabilities Message **shall** be sent in the following order:

1. The vSafe5V Fixed Supply Object **shall** always be the first object.
2. The remaining Fixed Supply Objects, if present, **shall** be sent in voltage order; lowest to highest.
3. The Battery Supply Objects, if present **shall** be sent in Minimum Voltage order; lowest to highest.
4. The Variable Supply (non-Battery) Objects, if present, **shall** be sent in Minimum Voltage order; lowest to highest.
5. The Programmable Power Supply Objects, if present, **shall** be sent in Maximum Voltage order; lowest to highest.

Figure 6-12 Example Capabilities Message with 2 Power Data Objects



In Figure 6-12, the Number of Data Objects field is 2: vSafe5V plus one other voltage.

Power Data Objects (PDO) and Augmented Power Data Objects (APDO) are identified by the Message Header's Type field. They are used to form Source Capabilities Messages and Sink Capabilities Messages.

## EXHIBIT 2

Sources expose their power capabilities by sending a Source Capabilities Message. Sinks expose their power requirements by sending a Sink Capabilities Message. Both are composed of a number of 32-bit Power Data Objects (see Table 6-7).

Table 6-7 Power Data Object

Bit(s)	Description	
B31...30	<b>Value</b>	<b>Parameter</b>
	00b	Fixed supply ( $V_{min} = V_{max}$ )
	01b	Battery
	10b	Variable Supply (non-Battery)
	11b	Augmented Power Data Object (APDO)
B29...0	Specific Power Capabilities are described by the PDOs in the following sections.	

The Augmented Power Data Object (APDO) is defined to allow support for more than the four PDO types by extending the Power Data Object field from 2 to 4 bits when the B31...B30 are 11b. The generic APDO structure is shown in Table 6-8.

Table 6-8 Augmented Power Data Object

Bit(s)	Description
B31...30	11b – Augmented Power Data Object (APDO)
B29...28	00b – Programmable Power Supply 01b-11b - <b>Reserved</b>
B27...0	Specific Power Capabilities are described by the APDOs in the following sections.

*Source: USB PD 3.0 specification.PDF*

determining whether the charger identification is in a list of charger identifications belonging to the plurality of authorized chargers;

The accused product practices determining whether the charger identification (e.g., specification revision value and capabilities of the charger as indicated in the Source Capabilities message) is in a list of charger identifications belonging to the plurality of authorized chargers (e.g., specification revision values and source capabilities supported by the accused device).

## EXHIBIT 2

An Attach event or a Hard Reset **Shall** cause the detection of the applicable Specification Revision to be performed for both Ports and Cable Plugs according to the rules stated below:

When the Source Port first communicates with the Sink Port the Specification Revision field **Shall** be used as described by the following steps:

1. The Source Port sends a **Source Capabilities** Message to the Sink Port setting the **Specification Revision** field to the highest Revision of the Power Delivery Specification the Source Port supports.
2. The Sink Port responds with a **Request** Message setting the **Specification Revision** field to the highest Revision of the Power Delivery Specification the Sink Port supports that is equal to or lower than the **Specification Revision** received from the Source Port.
3. The Source and Sink Ports **Shall** use the **Specification Revision** in the **Request** Message from the Sink in step 2 in all subsequent communications until a Detach, Hard Reset, or Error Recovery happens.

#### 6.2.1.1.5 Specification Revision

The Specification Revision field **Shall** be one of the following values (except 11b):

- 00b – Revision 1.0
- 01b – Revision 2.0
- 10b – Revision 3.0
- 11b – **Reserved, Shall Not** be used

To ensure interoperability with existing USBPD Products, USBPD Products **Shall** support every PD Specification Revision starting from **[USBPD 2.0]** for **SOP\***; the only exception to this is a VPD which **Shall Ignore** Messages sent with PD Specification Revision 2.0 and earlier.



## EXHIBIT 2

## 6.4.1.3 Sink Capabilities Message

A Sink Port **shall** report power levels it is able to operate at in a series of 32-bit Power Data Objects (see Table 6-7). These are returned as part of a **Sink Capabilities** Message in response to a **Get\_Sink\_Cap** Message (see Figure 6-12). This is similar to that used for Source Port capabilities with equivalent Power Data Objects for Fixed, Variable and Battery Supplies as defined in this section. Power Data Objects are used to convey the Sink Port's operational power requirements including Dual-Role Power Ports presently operating as a Source.

Each Power Data Object **shall** describe a specific Sink operational power level, such as a Battery (e.g. 2.8-4.1V) or a fixed power supply (e.g. 12V). The **Number of Data Objects** field in the Message Header **shall** define the number of Power Data Objects that follow the Message Header in a Data Message.

All Sinks **shall** minimally offer one Power Data Object with a power level at which the Sink can operate. A Sink **shall** **Not** offer multiple Power Data Objects of the same type (fixed, variable, Battery) and the same voltage but **shall** instead offer one Power Data Object with the highest available current for that Sink capability and voltage.

All Sinks **shall** include one Power Data Object that reports **vSafe5V** even if they require additional power to operate fully. In the case where additional power is required for full operation the Higher Capability bit **shall** be set.

## EXHIBIT 2

2.6.2 Sink Operation

- At Attach (no PD Connection or Contract):
  - Sink detects Source Attachment through the presence of *vSafe5V*.
  - For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.
  - Once the Sink detects the presence of *vSafe5V* on *V<sub>BUS</sub>* it waits for a *Source Capabilities* Message indicating the presence of a PD capable Source.
  - If the Sink does not receive a *Source\_Capabilities* Message within *tTypeCSinkWaitCap* then it issues *Hard Reset* Signaling in order to cause the Source Port to send a *Source\_Capabilities* Message if the Source Port is PD capable.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.
- Establishing PD Connection (no PD Connection or Contract):
  - The Sink receives a *Source\_Capabilities* Message and responds with a *GoodCRC* Message.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.
- Establishing Explicit Contract (PD Connection but no Explicit Contract or Implicit Contract after a Power Role Swap or Fast Role Swap):
  - The Sink receives a *Source\_Capabilities* Message from the Source and responds with a *Request* Message. If this is a *Valid* request the Sink receives an *Accept* Message followed by a *PS\_RDY* Message when the Source's power supply is ready to source power at the agreed level. At this point the Source and Sink have entered into an Explicit Contract:
    - The Sink Port may request one of the capabilities offered by the Source, even if this is the *vSafe5V* output offered by *[USB 2.0]*, *[USB 3.2]*, *[USB Type-C 2.0]* or *[USBBC 1.2]*, in order to enable future power negotiation:
      - ◆ A Sink not requesting any capability with a *Request* Message results in an error.
    - A Sink unable to fully operate at the offered capabilities requests the default capability but indicates that it would prefer another power level and provide a physical indication of the failure to the end user (e.g. using an LED).
    - A Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.

*Source: USB PD 3.0 specification.PDF*

The accused product receives energy from a charger (e.g., authorized charger) which provides source capabilities and supported specification revision value. In case the charger doesn't provide a supported specification revision



## EXHIBIT 2

value, i.e., if the charger complies with USB PD 1.0, or the charger doesn't provide source capabilities requested by the accused device, the accused product will not consider the charger as an authorized charger and communication gets fail. The communication between charger and the accused product comes to a USB default operation at zero volts.

#### 6.2.1.1.5 Specification Revision

The Specification Revision field **Shall** be one of the following values (except 11b):

- 00b – Revision 1.0
- 01b – Revision 2.0
- 10b – Revision 3.0
- 11b – **Reserved, Shall Not** be used

To ensure interoperability with existing USBPD Products, USBPD Products **Shall** support every PD Specification Revision starting from [USBPD 2.0] for **SOP\***; the only exception to this is a VPD which **Shall Ignore** Messages sent with PD Specification Revision 2.0 and earlier.

## EXHIBIT 2

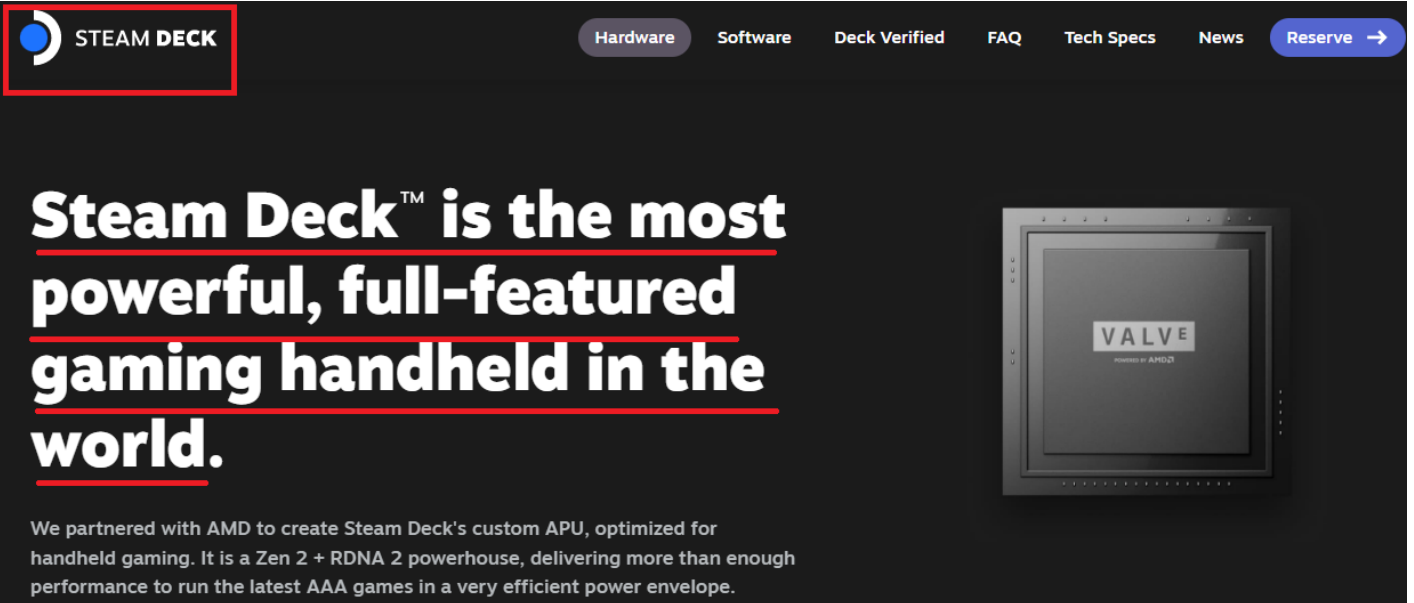
**2.6.2 Sink Operation**

- At Attach (no PD Connection or Contract):
  - Sink detects Source Attachment through the presence of *vSafe5V*.
  - For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.
  - Once the Sink detects the presence of *vSafe5V* on  $V_{BUS}$  it waits for a *Source Capabilities* Message indicating the presence of a PD capable Source.
  - If the Sink does not receive a *Source\_Capabilities* Message within *tTypeCSinkWaitCap* then it issues *Hard Reset* Signaling in order to cause the Source Port to send a *Source\_Capabilities* Message if the Source Port is PD capable.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.
- Establishing PD Connection (no PD Connection or Contract):
  - The Sink receives a *Source\_Capabilities* Message and responds with a *GoodCRC* Message.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.
- Establishing Explicit Contract (PD Connection but no Explicit Contract or Implicit Contract after a Power Role Swap or Fast Role Swap):
  - The Sink receives a *Source\_Capabilities* Message from the Source and responds with a *Request* Message. If this is a *Valid* request the Sink receives an *Accept* Message followed by a *PS\_RDY* Message when the Source's power supply is ready to source power at the agreed level. At this point the Source and Sink have entered into an Explicit Contract:
    - The Sink Port may request one of the capabilities offered by the Source, even if this is the *vSafe5V* output offered by *[USB 2.0]*, *[USB 3.2]*, *[USB Type-C 2.0]* or *[USBBC 1.2]*, in order to enable future power negotiation:
      - ◆ A Sink not requesting any capability with a *Request* Message results in an error.
    - A Sink unable to fully operate at the offered capabilities requests the default capability but indicates that it would prefer another power level and provide a physical indication of the failure to the end user (e.g. using an LED).
    - A Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and *Discards* them.

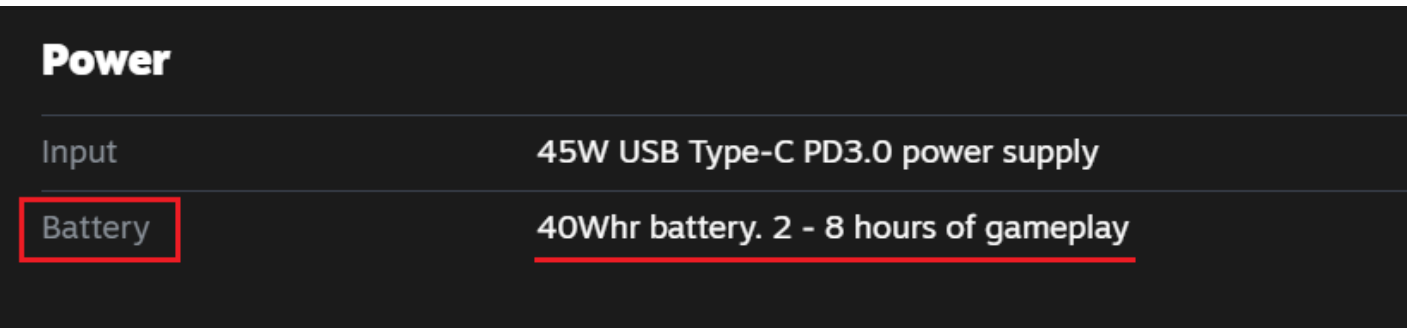
## EXHIBIT 2

	<p style="text-align: center;">8.3.3.2.8 PE_SRC_Capability_Response State</p> <p>The Policy Engine <b>Shall</b> enter the <b>PE_SRC_Capability_Response</b> state if there is a Request received from the Sink that <u>cannot be met based on the present capabilities</u>. When the present Contract is not within the present capabilities it is regarded as <b>Invalid</b> and a Hard Reset will be triggered.</p> <p style="text-align: center;"><b>7.1.5 Response to Hard Resets</b></p> <p><b>Hard Reset</b> Signaling indicates a communication failure has occurred and the Source <b>Shall</b> stop driving VCONN, <b>Shall</b> remove Rp from the VCONN pin and <b>Shall</b> drive V<sub>BUS</sub> to <b>vSafe0V</b> as shown in Figure 7-10. The USB connection <b>May</b> reset during a Hard Reset since the V<sub>BUS</sub> voltage will be less than <b>vSafe5V</b> for an extended period of time. After establishing the <b>vSafe0V</b> voltage condition on V<sub>BUS</sub>, the Source <b>Shall</b> wait <b>tSrcRecover</b> before re-applying VCONN and restoring V<sub>BUS</sub> to <b>vSafe5V</b>. A Source <b>Shall</b> conform to the VCONN timing as specified in [USB Type-C 2.0].</p> <p>Device operation during and after a Hard Reset is defined as follows:</p> <ul style="list-style-type: none"> <li>Self-powered devices <b>Should Not</b> disconnect from USB during a Hard Reset (see Section 9.1.2).</li> <li>Self-powered devices operating at more than <b>vSafe5V</b> <b>May Not</b> maintain full functionality after a <b>Hard Reset</b>.</li> <li>Bus powered devices will disconnect from USB during a Hard Reset due to the loss of their power source.</li> </ul> <p>When a Hard Reset occurs the Source <b>Shall</b> stop driving VCONN, <b>Shall</b> remove Rp from the VCONN pin and <b>Shall</b> start to transition the V<sub>BUS</sub> voltage to <b>vSafe0V</b> either:</p> <ul style="list-style-type: none"> <li><b>tPSHardReset</b> after the last bit of the <b>Hard Reset</b> Signaling has been received from the Sink or</li> <li><b>tPSHardReset</b> after the last bit of the <b>Hard Reset</b> Signaling has been sent by the Source.</li> </ul> <p>The Source <b>Shall</b> meet both <b>tSafe5V</b> and <b>tSafe0V</b> relative to the start of the voltage transition as shown in Figure 7-10.</p> <table border="1"> <tr> <td style="text-align: center;"><u><b>vSafe0V</b></u></td><td style="text-align: center;"><u>Safe operating voltage at “zero volts”.</u></td></tr> </table> <p><i>Source: USB PD 3.0 specification.PDF</i></p>	<u><b>vSafe0V</b></u>	<u>Safe operating voltage at “zero volts”.</u>
<u><b>vSafe0V</b></u>	<u>Safe operating voltage at “zero volts”.</u>		
in response to determining that the charger identification is in the list of charger identifications: receiving the energy from the charger;	The accused product practices the method such that in response to determining that the charger identification (e.g., identification information related to specification revision value as well as capabilities indicated in the Source Capabilities message sent by the charger) is in a list of charger identifications (e.g., specification revision values and capabilities supported by the accused device), it practices receiving the energy from the charger (e.g., USB PD compliant charger).		

## EXHIBIT 2

The image shows the top section of the Steam Deck website. At the top left is the Steam Deck logo, which consists of a blue circle with a white 'S' and the words 'STEAM DECK' in white. To the right of the logo is a navigation bar with links: 'Hardware', 'Software', 'Deck Verified', 'FAQ', 'Tech Specs', 'News', and a 'Reserve' button with a right arrow. Below the navigation bar is a large black section with white text. The text reads: 'Steam Deck™ is the most powerful, full-featured gaming handheld in the world.' The words 'powerful, full-featured' and 'gaming handheld' are underlined. To the right of the text is an image of the Steam Deck handheld device, which is black with a silver frame and the 'VALVE' logo on the screen. Below the main text is a paragraph: 'We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope.'

<https://www.steamdeck.com/en/hardware>

The image shows the 'Power' section of the Steam Deck website. It has a black background with white text. The word 'Power' is at the top. Below it are two rows of specifications. The first row has 'Input' on the left and '45W USB Type-C PD3.0 power supply' on the right. The second row has 'Battery' on the left and '40Whr battery. 2 - 8 hours of gameplay' on the right. The word 'Battery' is underlined.

<https://www.steamdeck.com/en/tech>

EXHIBIT 2

Power	
Input	<u>45W USB Type-C PD3.0 power supply</u>
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>



Source: Steam deck external image



## EXHIBIT 2

An Attach event or a Hard Reset **Shall** cause the detection of the applicable Specification Revision to be performed for both Ports and Cable Plugs according to the rules stated below:

When the Source Port first communicates with the Sink Port the Specification Revision field **Shall** be used as described by the following steps:

1. The Source Port sends a **Source Capabilities** Message to the Sink Port setting the **Specification Revision** field to the highest Revision of the Power Delivery Specification the Source Port supports.
2. The Sink Port responds with a **Request** Message setting the **Specification Revision** field to the highest Revision of the Power Delivery Specification the Sink Port supports that is equal to or lower than the **Specification Revision** received from the Source Port.
3. The Source and Sink Ports **Shall** use the **Specification Revision** in the **Request** Message from the Sink in step 2 in all subsequent communications until a Detach, Hard Reset, or Error Recovery happens.

#### 6.4.1.3 Sink Capabilities Message

A Sink Port **Shall** report power levels it is able to operate at in a series of 32-bit Power Data Objects (see Table 6-7). These are returned as part of a **Sink Capabilities** Message in response to a **Get\_Sink\_Cap** Message (see Figure 6-12). This is similar to that used for Source Port capabilities with equivalent Power Data Objects for Fixed, Variable and Battery Supplies as defined in this section. Power Data Objects are used to convey the Sink Port's operational power requirements including Dual-Role Power Ports presently operating as a Source.

Each Power Data Object **Shall** describe a specific Sink operational power level, such as a Battery (e.g. 2.8-4.1V) or a fixed power supply (e.g. 12V). The **Number of Data Objects** field in the Message Header **Shall** define the number of Power Data Objects that follow the Message Header in a Data Message.

All Sinks **Shall** minimally offer one Power Data Object with a power level at which the Sink can operate. A Sink **Shall Not** offer multiple Power Data Objects of the same type (fixed, variable, Battery) and the same voltage but **Shall** instead offer one Power Data Object with the highest available current for that Sink capability and voltage.

All Sinks **Shall** include one Power Data Object that reports **vSafe5V** even if they require additional power to operate fully. In the case where additional power is required for full operation the Higher Capability bit **Shall** be set.

## EXHIBIT 2

2.6.2 Sink Operation

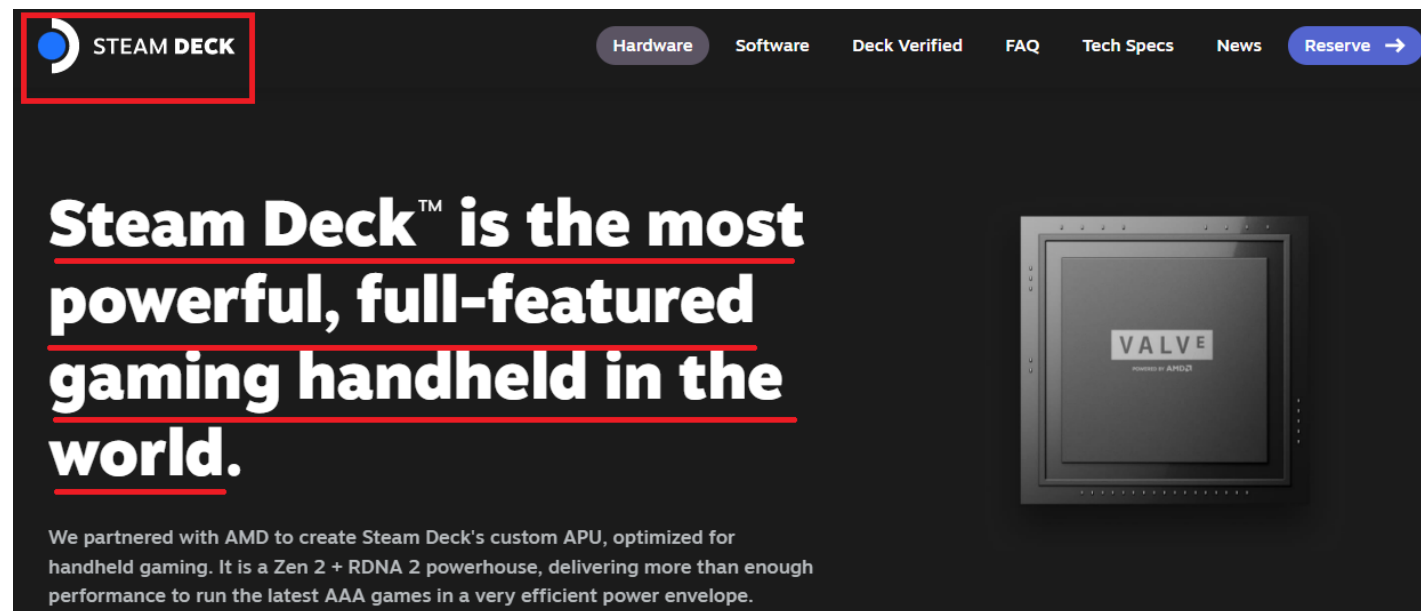
- At Attach (no PD Connection or Contract):
  - Sink detects Source Attachment through the presence of **vSafe5V**.
  - For a DRP that toggles the Port becomes a Sink Port on Attachment of a Source.
  - Once the Sink detects the presence of **vSafe5V** on  $V_{BUS}$  it waits for a **Source Capabilities** Message indicating the presence of a PD capable Source.
  - If the Sink does not receive a **Source Capabilities** Message within **tTypeCSinkWaitCap** then it issues **Hard Reset** Signaling in order to cause the Source Port to send a **Source Capabilities** Message if the Source Port is PD capable.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and does not recognize them.
- Establishing PD Connection (no PD Connection or Contract):
  - The Sink receives a **Source Capabilities** Message and responds with a **GoodCRC** Message.
  - The Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and **Discards** them.
- Establishing Explicit Contract (PD Connection but no Explicit Contract or Implicit Contract after a Power Role Swap or Fast Role Swap):
  - The Sink receives a **Source Capabilities** Message from the Source and responds with a **Request** Message. If this is a **Valid** request the Sink receives an **Accept** Message followed by a **PS\_RDY** Message when the Source's power supply is ready to source power at the agreed level. At this point the Source and Sink have entered into an Explicit Contract:
    - The Sink Port may request one of the capabilities offered by the Source, even if this is the **vSafe5V** output offered by **[USB 2.0]**, **[USB 3.2]**, **[USB Type-C 2.0]** or **[USBBC 1.2]**, in order to enable future power negotiation:
      - ◆ A Sink not requesting any capability with a **Request** Message results in an error.
    - A Sink unable to fully operate at the offered capabilities requests the default capability but indicates that it would prefer another power level and provide a physical indication of the failure to the end user (e.g. using an LED).
    - A Sink does not generate SOP' or SOP'' Packets, is not required to detect SOP' or SOP'' Packets and **Discards** them.

*Source: USB PD 3.0 specification.PDF*

## EXHIBIT 2

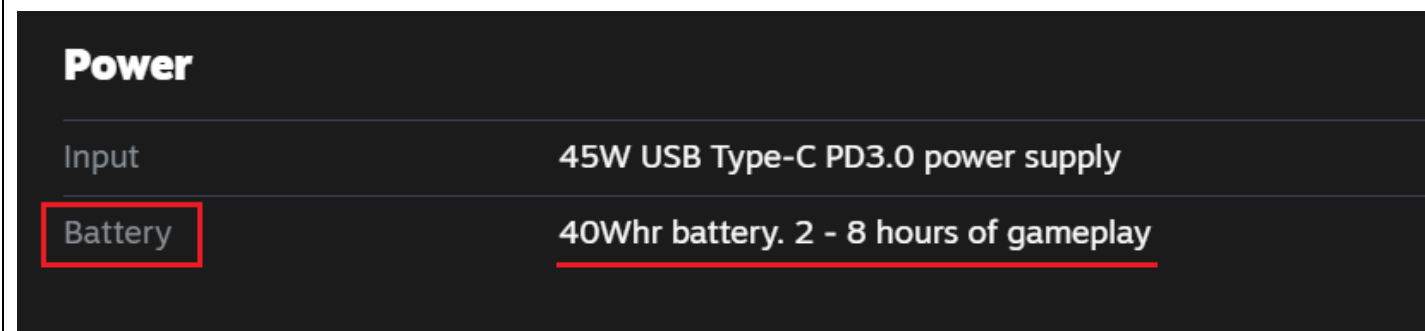
generating, using the converter, the power from the energy received from the charger;

The accused product practices generating, using the converter (e.g., converting power from USB to battery charging), the power from the energy received from the charger (e.g., USB PD charger).



The screenshot shows the Steam Deck website. The top navigation bar includes links for Hardware, Software, Deck Verified, FAQ, Tech Specs, News, and a Reserve button. The main headline reads: **Steam Deck™ is the most powerful, full-featured gaming handheld in the world.** Below this, a paragraph states: "We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope." To the right of the text is an image of the Steam Deck handheld device.

<https://www.steamdeck.com/en/hardware>



The screenshot shows a table titled "Power" with two rows: "Input" and "Battery". The "Battery" row is highlighted with a red box. The "Battery" row specifies "40Whr battery. 2 - 8 hours of gameplay".

Power	
Input	45W USB Type-C PD3.0 power supply
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>



EXHIBIT 2

## EXHIBIT 2



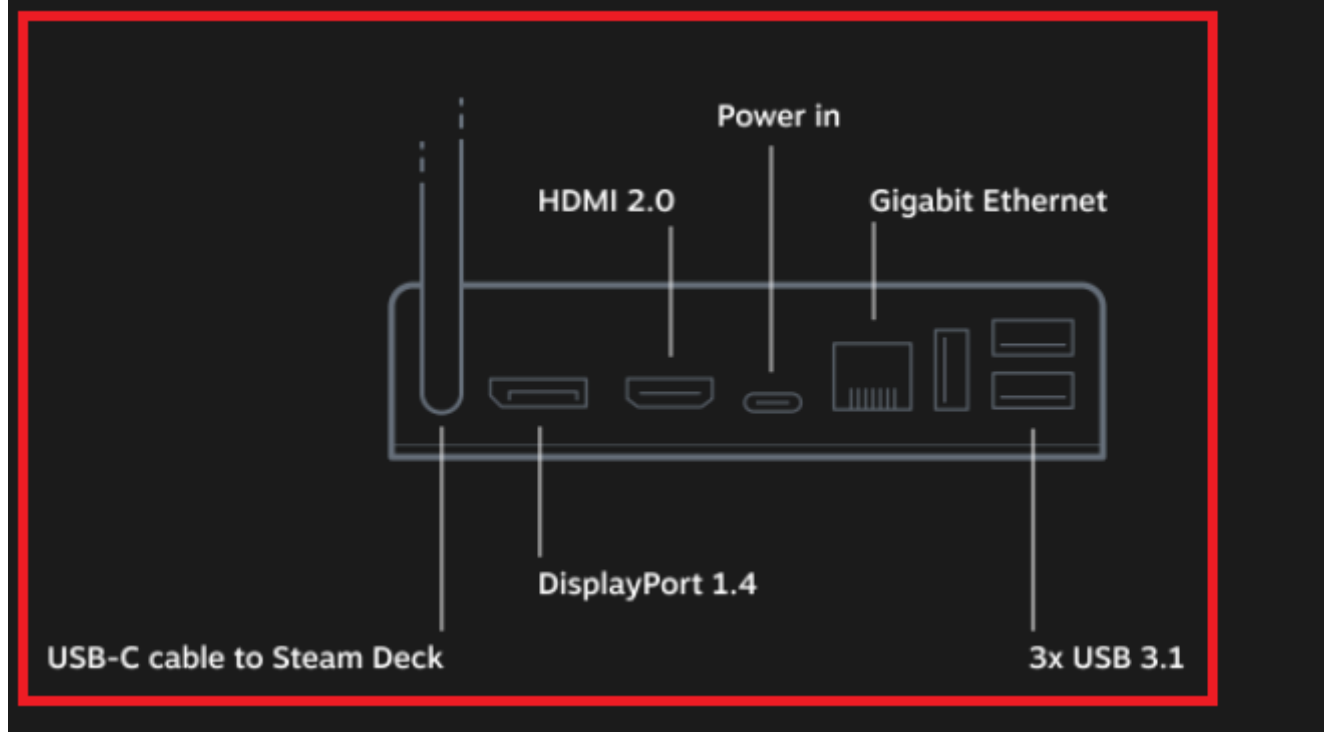
*Source: Steam deck internal image*

EXHIBIT 2



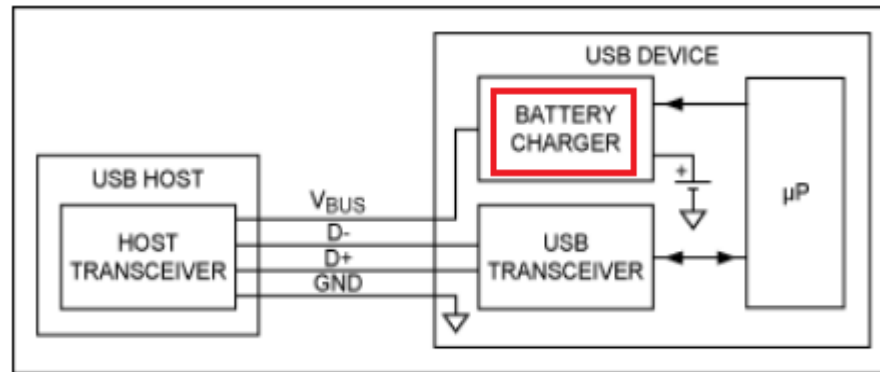
*Source: Steam deck external image*

EXHIBIT 2



<https://www.steamdeck.com/en/tech>

## EXHIBIT 2




<https://www.electronicproducts.com/the-basics-of-usb-battery-charging-a-survival-guide/#>

charging the battery using the power received from the converter; and using the battery to power the electronic circuitry.

The accused product practices charging the battery (e.g., battery of the accused product) using the power received from the converter (e.g., converting power from USB to battery charging) and using the battery to power the electronic circuitry (e.g., display of the accused product).


## EXHIBIT 2

STEAM DECK

HardwareSoftwareDeck VerifiedFAQTech SpecsNewsReserve →

# Steam Deck™ is the most powerful, full-featured gaming handheld in the world.

We partnered with AMD to create Steam Deck's custom APU, optimized for handheld gaming. It is a Zen 2 + RDNA 2 powerhouse, delivering more than enough performance to run the latest AAA games in a very efficient power envelope.



<https://www.steamdeck.com/en/hardware>

## Power

Input	45W USB Type-C PD3.0 power supply
<b>Battery</b>	<u>40Whr battery. 2 - 8 hours of gameplay</u>

<https://www.steamdeck.com/en/tech>

EXHIBIT 2

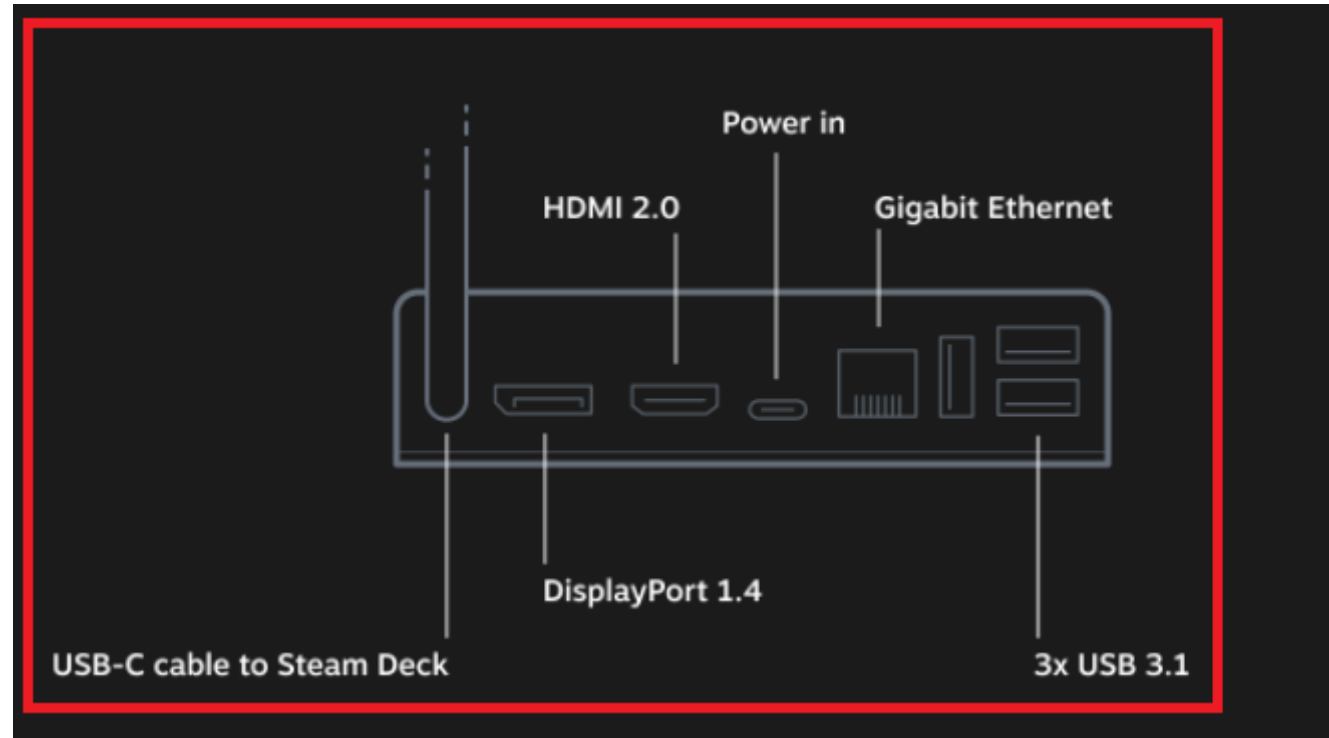
Power	
Input	<u>45W USB Type-C PD3.0 power supply</u>
Battery	40Whr battery. 2 - 8 hours of gameplay

<https://www.steamdeck.com/en/tech>



Source: Steam deck external image

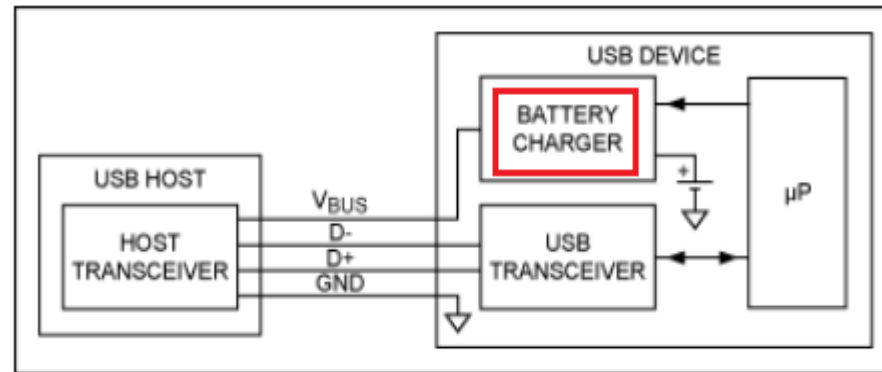
EXHIBIT 2



<https://www.steamdeck.com/en/tech>



## EXHIBIT 2



<https://www.electronicproducts.com/the-basics-of-usb-battery-charging-a-survival-guide/#>

As shown below, the accused product comprises a rechargeable battery.

## EXHIBIT 2



*Source: Steam deck internal image*

As shown below, the accused product comprises display which is powered by the battery of the accused product.

## EXHIBIT 2

	<b>Display</b>	
	Resolution	1280 x 800px (16:10 aspect ratio)
	Type	Optically bonded IPS LCD for enhanced readability
	Display size	7" diagonal
	Brightness	400 nits typical
	Refresh rate	60Hz
	Touch enabled	Yes
	Sensors	Ambient light sensor
<a href="https://www.steamdeck.com/en/tech">https://www.steamdeck.com/en/tech</a>		